Special report on an industry vital to railroads

November 15, 1965

RAILWAY AGE WEEKLY

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COAL: An old fuel shows new energy p. 17

Union Pacific Railroad Photo

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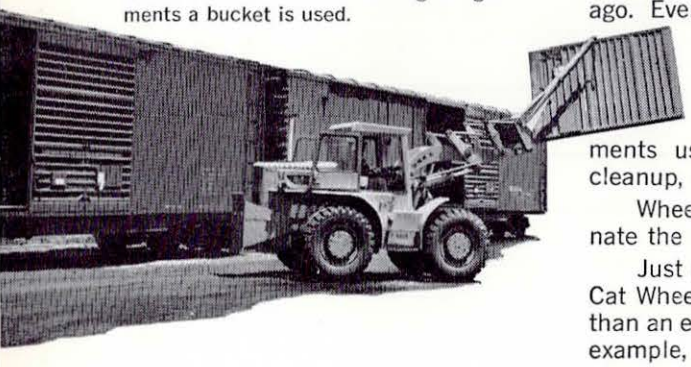

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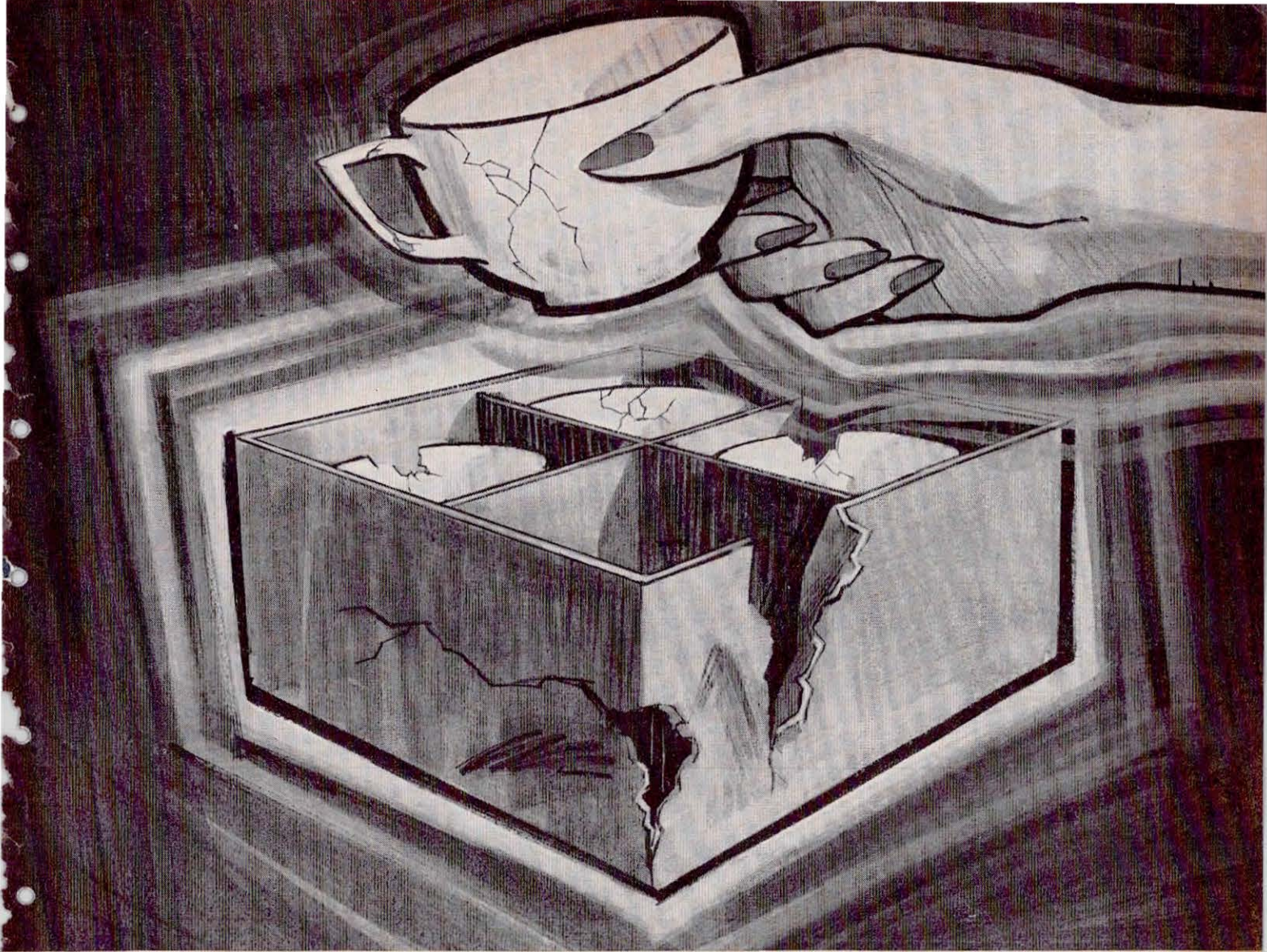

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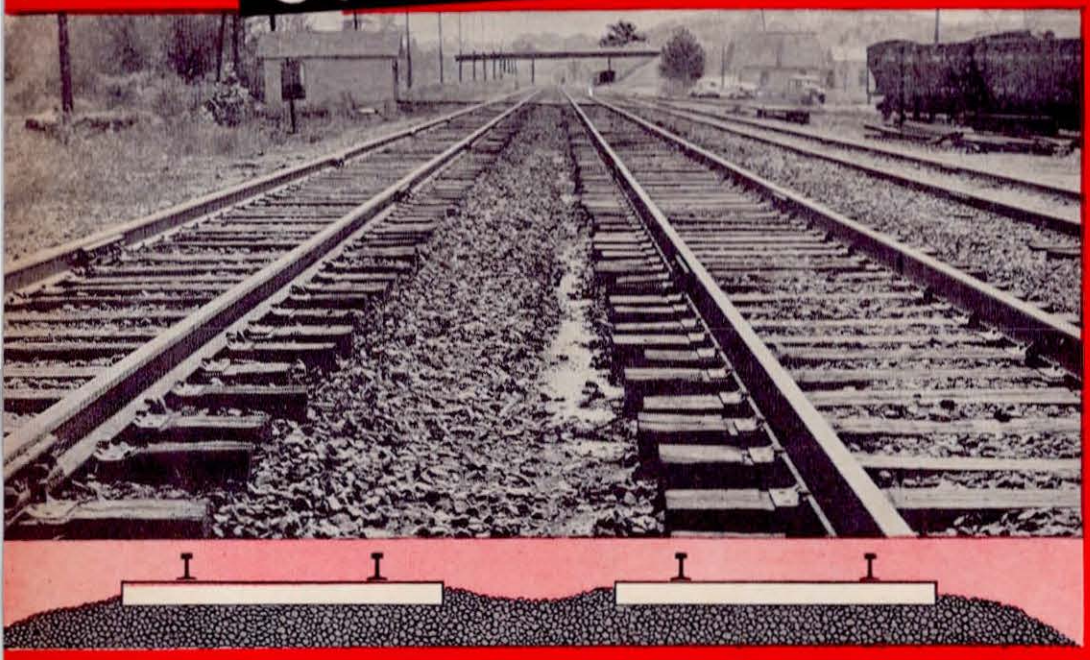
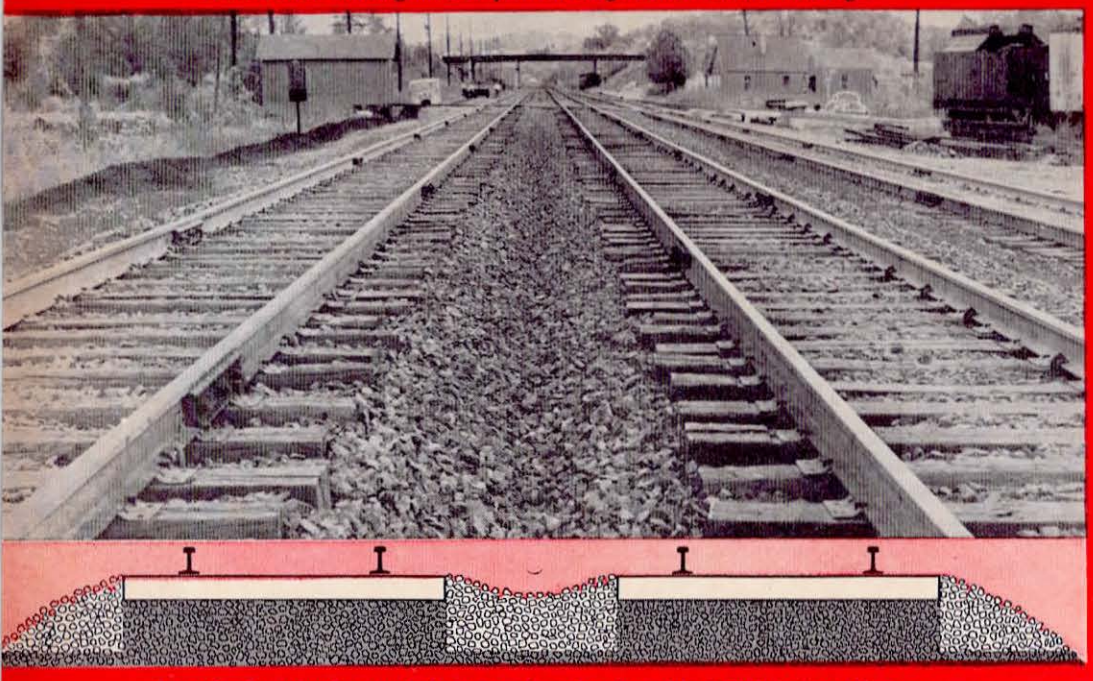


Cross-Section showing little or poor drainage before Ballast Cleaning.



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November 15, 1965 • Vol. 159, No. 19

COAL: AN OLD FUEL SHOWS NEW ENERGY

Railroads have done much to rekindle the fuel's markets.
P.17

What's ahead in the BLE-BLF&E power struggle?

Now that the Firemen have won on the IC, both unions may turn their attention to other matters **p.11**

Ore cars load, unload on the move

In-motion loading and unloading is a basic element of Wabush Mines' new tubular covered hopper cars **p.28**

Three 'hard rail' plants reopened

Linde's new flame-hardening process is designed to prolong the useful life of rail **p.30**

The Action Page—RPI plans for the next ten years

The Institute foresees another decade of improvement for railroads and their suppliers **p.46**

Departments

Freight Carloadings	41	Railway Market	41
Monday Morning Report	8	Short and Significant	7
New Equipment	41	Supply Trade	44
New Products Report	24	The Action Page	46
People in the News	44	Watching Washington	12
Railroading After Hours	23	You Ought to Know	42

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SHORT AND SIGNIFICANT

Trains roll as power returns to New York

New York area commuter railroads were about back to normal late last week after The Great Blackout caused the worst rail traffic jam in recent history. The power failure in the Northeast hit the roads at the height of the evening rush hour and stopped all electric trains dead in their tracks for nearly 14 hours. Thousands were stranded on stalled trains on New York Central tracks below Park Avenue in New York City, on elevated portions of the Long Island, and in New Haven trains stretched out from Grand Central to the Bronx. Wednesday, the Long Island was able to offer only token service to its 90,000 daily riders, and the New Haven was unable to operate any inbound service in the morning, going on partial schedules later in the day. New York Central had full service operating by 10 a.m. The Pennsylvania continued to operate out of Pennsylvania Station using its own power, and New Jersey roads also were unaffected by the power failure.

UP moves toward 'real-time' data

Union Pacific unveiled plans last week for a "complete operating information system" (dubbed COIN). Heart of the new system, said UP President Edd H. Bailey, will be four solid-state computers that will be linked with UP's system-wide microwave. The Omaha-based computers will be connected with principal locations throughout the railroad as well as major off-line traffic agencies. Freight agents, terminal superintendents, traffic agents and operating officers, will have input-output devices to enter or read-out "real-time" (as it happens) data. First of the four computers will be installed in September 1966, and the last one a year later. Said Bailey: "There's no longer any room in our business for any educated guesswork. We've got to know just exactly where we stand every day and every minute if we're to survive in the face of growing competition."

Railroad retirement figures, and a note of caution

Out of Washington last week came figures on the Railroad Retirement account's 1964-65 fiscal year. It closed out June 30 with a balance of $4,204.2 million, an increase of $130.6 million for the year. Total receipts were $1,258.7 million, total expenditures $1,128.1 million. RRB has this comment: "While it's gratifying that the balance in the account continues to increase from year to year, it should also be remembered that this is part of the plan for financing the Railroad Retirement system. Under this plan, the balance is built up in order for interest earned on this balance to supplement other income. Therefore, the balance should not be looked upon as a surplus which could be used to increase benefit levels. As a matter of fact, the benefit liabilities of the system for service already performed are actuarialy greater than the balance in the fund."

Another TOFC record makes it two in a row

For the second consecutive week, piggyback loadings have broken through to a new all-time high. In the week ended Oct. 30, TOFC loadings totaled 22,988 cars—beating the record of 22,865 cars set the previous week. For this year's first 10 months, 869,026 cars were loaded with piggyback trailers—15.3% above 1964's 10-month level.

MONDAY MORNING REPORT

The divisions controversy: It rolls on and on

Pity the poor referees in the 11-year-old squabble between the Mountain-Pacific roads and the Eastern roads over who gets how much for handling transcontinental traffic. Both the Interstate Commerce Commission and the courts must have felt they were seeing a little daylight at the end of the tunnel when East and West last month did finally achieve a general divisions agreement (after Southern Pacific, Cotton Belt and Rio Grande reached a settlement with eastern roads last summer). The interested roads followed through with a petition to the ICC asking that the Commission vacate that part of its 1963 order No. 31303 that prescribed a new basis for dividing the revenues (estimated at close to $900 million) generated by approximately 910,000 carloads of Official-Transcontinental traffic every year. The 1963 order would have shifted about $50 million from West to Eastern and Midwestern roads. The compromise general divisions agreement would have cut this down to about $30 million.

Midwest roads want to advise and consent

Last week, however, lawyers representing 54 Midwestern roads made it clear that the Midwest didn't intend for East and West to meet unless the twain talked and settled with the Midwest first. Roads like C&NW, IC, MoPac, Milwaukee, GM&O, CGW and 48 smaller roads charged that the general divisions agreement between East and West represented an attempt "to change the present divisions of non-concurring Midwestern lines without their consent and without an order from the Commission." The Midwestern roads, accordingly, asked the ICC to deny the petition of the Eastern and Mountain-Pacific roads for vacating the 1963 divisions.

A bigger slice of a smaller pie?

Under divisions established back in the 1920s, a San Francisco-New York shipment is divided this way: 72.5% of the through rate goes to roads west of Chicago. A Midwestern road handling between Council Bluffs and Chicago receives 16.5% of the 72.5% for its intermediate service—or about 12% of the through rate. Under the 1963 order of the ICC, the primary division west of Chicago was reduced to 66% of the through rate but the take of the Midwestern carrier was increased to 19% of the 66%, which came to about 13% of the through rate. Now, say the Midwestern carriers, the East and West railroads have "agreed among themselves, without having obtained the consent of all interested participating carriers, to change the primary divisions on a large amount of traffic." Under the general settlement opposed by the Midwestern carriers the primary division west of Chicago would be 67.5% and the Midwestern line would get 16.5% of that for its Chicago-Council Bluffs haul—which would amount to 11.1% of the through rate.

Small percentages—but millions of dollars

These percentages, small though they are, represent many millions of dollars to individual carriers. Western carriers, for example, faced with the 1963 changes in divisions, have accrued more than $100 million against the possibility of their losing the appeal they have made in the federal courts of the ICC's order. One Midwestern rate officer last week grimly described the situation as "a can of worms that may grow into a barrel of snakes before it's all over." The general divisions settlement between East and West, in the view of the Midwest, would "subvert the subdivisions prescribed by the ICC for intermediate service in Midwestern territory, establish unfair primary divisions, result in inconsistent bases of divisions via competing routes and gateways and bring about a chaotic situation in the interline settlements on Official-Transcontinental traffic."

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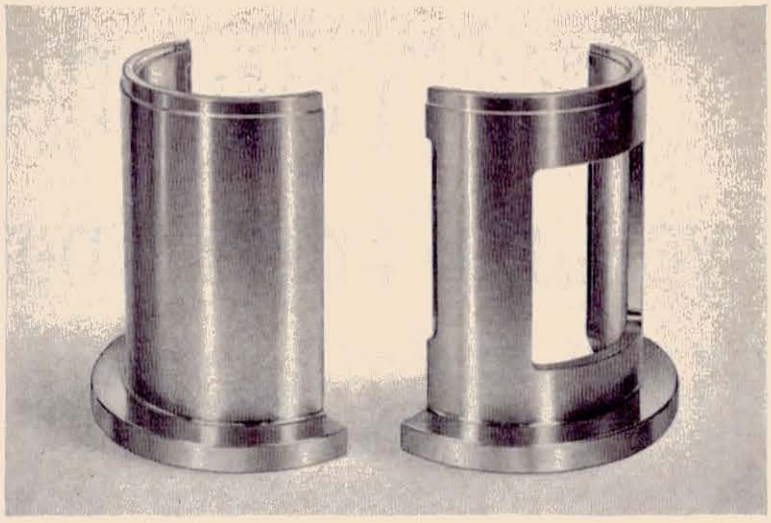

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RAILWAY AGE WEEKLY

NOVEMBER 15, 1965

What's next in the BLE-BLF&E power battle?

Now that the inter-union fight has ended on the IC in favor of the Firemen, will other roads be made battlegrounds by the two engine-service groups? Indications are that both organizations may back off to take stock.

On Illinois Central, engineers are Engineers and firemen are Firemen—and they're going to stay that way.

Less than a year ago, the Brotherhood of Locomotive Firemen & Enginemen tried to take the contract for IC engineers away from the Brotherhood of Locomotive Engineers. And the BLF&E suffered a resounding defeat. Last month, IC firemen voted on the BLE's attempt to take the contract for firemen away from the BLF&E. And the BLE went down to an equally crushing defeat.

● **Not even close.** In turning back the BLE's challenge, the BLF&E pulled 63.7% of the vote, winning by a 343-195 count. In the earlier contest, for representation of engineers, the BLE drew 63.1% of the vote and came out on top, 692-404.

Reaction to the BLF&E victory was predictable: The Firemen called their triumph "a strong vote of confidence in the BLF&E and a severe rebuke to the pro-management dealings of the BLE." The Engineers expressed little disappointment, and added that the defeat "will in no way deter the BLE from its policy of continuing to offer assistance to all engine-service employees so that they may enjoy working conditions and job security not now possible for them under the banner of the BLF&E."

Each organization analyzed the outcome in its own way.

● **'Ready to fight.'** BLF&E President H. E. Gilbert and Vice President Clarence Caldwell saw national implications to the one-railroad vote. Caldwell, who headed up the Firemen's effort on IC, said the show of support for the BLF&E "has great significance in the forthcoming fight to restore thousands of firemen's jobs wiped out by compulsory arbitration. The men are ready to fight for their jobs. They clearly rejected the 'give-up' philosophy of the leadership of the BLE and are ready to defend the need for helpers (firemen) again, once they are no longer under government control."

Gilbert put it just as strongly. The victory, he said, "will give new impetus to the brotherhood's plan to get a settlement of the fireman issue through collective bargaining. I think the vote is a loud and clear message to both the BLE and railroad management that the fireman issue is not a dead one and that the men who have been mistreated for nearly two years under compulsory arbitration have not lost their will to win."

● **'No regrets.'** The Engineers, coming out losers in a contest a number of observers thought they might win, expressed a thought that the results would actually be more disappointing in the long run to the firemen involved than to the BLE. And, said Grand Chief Perry S. Heath, "by their action the majority of IC firemen repudiated the contention of the BLF&E that members of the junior organization are overwhelmingly in favor of one organization for men in engine servcie." In any event, Heath added, the BLE "does not regret having given firemen this opportunity to change their collective-bargaining representative. . . . The opportunity was there. They could have accepted the progressive, helping hand of the BLE, which has the power and prestige to represent men in a manner that obtains beneficial results. Or they could vote to continue to be represented by an organization that has nothing but empty promises to offer."

Why did IC's firemen vote the way they did? There is no for-certain answer. But union spokesmen and outside observers saw a number of elements figuring in the balloting.

● **The BLF&E viewpoint:** Looking back on their campaign, BLF&E officers said the "unnatural attachment of the BLE leadership to top railroad industry negotiators had a major impact on the vote. During the jurisdictional battle, the BLE's grand chief engineer wrote to a Senate committee stating that the BLE believed that absence of firemen from locomotive cabs had not adversely affected railway safety and efficiency. The letter caused both engineers and firemen to reject the BLE on the IC and many other railroads." BLF&E Vice President Caldwell also charged that rail management had watched the IC vote "with great self-interest. Had we lost the vote, the IC would be a showcase of collusion in

WATCHING WASHINGTON WITH WALTER TAFT

TAFT

• **OREN HARRIS' VALEDICTORY** advises that what the country needs in transportation is "adequate but minimum regulations, maximum competition, and a rededication of compliance and abiding by the rules." The valedictory, or "legacy," as he also calls it, was delivered by Harris at the recent annual meeting of American Trucking Associations in New York.

It anticipates his retirement from Congress sometime next year. He will then assume the duties of a federal judgeship to which he has been appointed by President Johnson and confirmed by the Senate. Harris, of course, speaks from experience. He has been a congressman from Arkansas since 1941, a member of the House Committee on Interstate and Foreign Commerce since 1943, and chairman of that committee since 1957.

HIS HOUSE LEADERSHIP on transport legislation thus includes his work on the Transportation Act of 1958. That added important rate-freedom and service-abandonment (so-called train-off) provisions to the Interstate Commerce Act.

THE PEOPLE ARE DETERMINED to have adequate transportation service—and "if they can't get it one way, they will get it another," Harris said. He wants to see the way of free enterprise continued. He warns, however, that "there are some in this country who, unfortunately, do not."

PEOPLE OF THAT BELIEF, Harris explains, do not always take a direct route to their goal. They work for more comprehensive and intensive regulation until "the erosion of what is left to private initiative and management is so serious and so constant that in the long run the American way of a transportation system will disappear."

OTHER FEATURES of the Harris valedictory include his recall of his unsuccessful 1964 effort to do something about the late President Kennedy's rate-freedom recommendations which were endorsed by President Johnson. These Presidential proposals would end all minimum rate regulation for the transportation of commodities in bulk and agricultural and fishery products. They were advanced as an approach to more equal regulation in view of present provisions of the IC Act which leave water transportation of commodities in bulk and truck transportation of agricultural and fishery products free of all regulation.

THE 1964 HARRIS BILL composed half a loaf in this area. It would have extended the agricultural exemption to railroads and water carriers and narrowed the bulk-commodity exemption while leaving it applicable only to water carriers. The bill also had other controversial provisions. It died when it failed by one vote to clear the House Rules Committee, which controls that body's legislative timetable.

ALL WAS NOT LOST, however, in Harris' opinion. Among favorable developments in the aftermath of the bill's defeat, he lists the ICC's decision on reconsideration of the "Big John" case. This full clearance of Southern's reduced rates for shipments of grain in "Big John" hoppers pointed up the Commission's disposition to let rates reflect breakthroughs in control of costs and advances in the art of railroading. Or, as Harris puts it, the Commission "substantially confirmed the theory of greater competition and less regulation."

a matter of weeks with IC firemen guinea pigs for BLE-management programs."

Caldwell's reference was apparently to the BLE proposal to negotiate an apprentice-engineer program on IC in the event the Engineers won the contract to represent firemen. There had been, however, no notice and no negotiations looking toward the setting up of such a program in advance of the balloting.

• **'Why,' as the BLE sees it:** BLE Grand Chief Heath had a different view of the reasons why his organization lost the vote. The BLE, he recalled, held authorization cards from about 75% of IC firemen—but "undoubtedly, many who earlier indicated a desire to have the BLE as their representative changed their mind as a result of the vicious propaganda campaign of the junior organization."

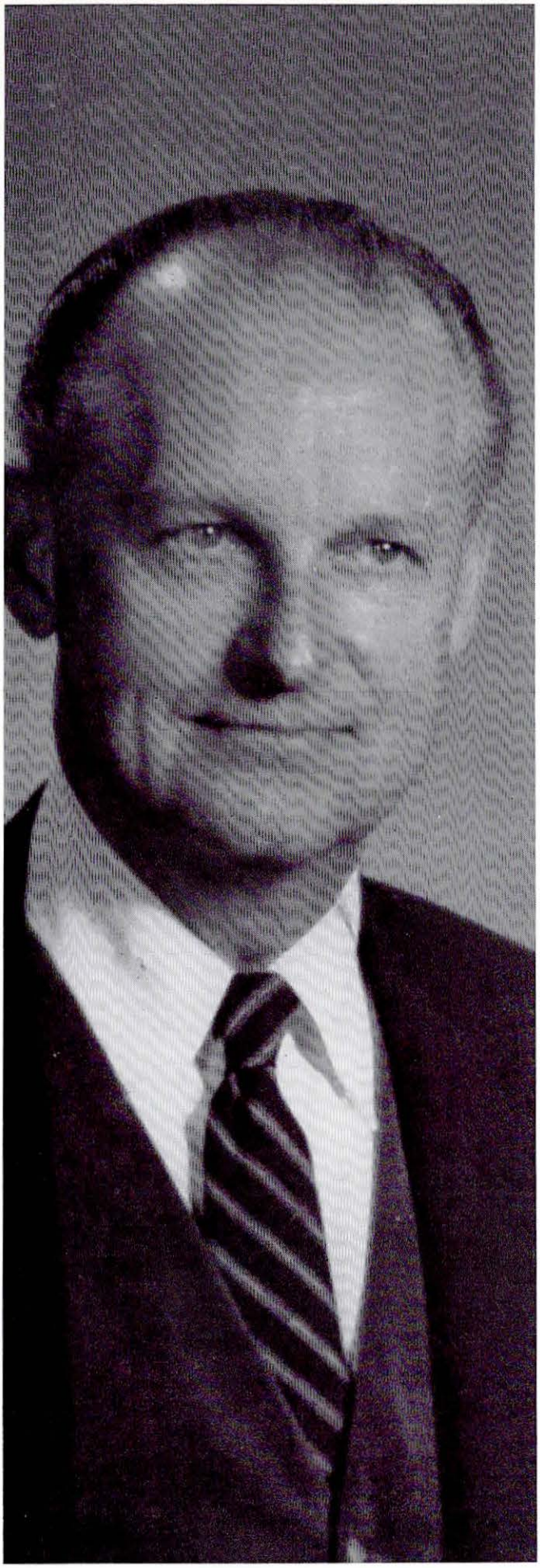
Another BLE spokesman commented that "we thought we had a new approach, something to offer that was concrete, on the fireman problem, and thought we explained it thoroughly.

Among union people and on the outside, there were two other factors mentioned: (1) The BLE may have gone into the vote with too small a power base; and (2) it may have issued its challenge too soon.

Had the issue been an attempt by the BLE to wrest an engineers' contract away from the BLF&E, one observer noted, the BLE probably wouldn't have gone to a vote unless it had 70% of the group (or better) as members. On IC, however, it was a case of approaching firemen—the A-card tally looked promising and, reportedly, some men signing the cards indicated they did not want to join the BLE until the union won the contract.

The second point—a premature challenge—is even harder to assess. The BLF&E itself had confidence in its strength on IC—after all, it challenged for the engineers' contract less than a year ago.

• **What's ahead?** In any event, the IC fight is over, and no new challenges can come for two years following the taking of a vote. Will other roads be made battlegrounds by the two engine-service organizations? Perhaps—but probably not for some time. For one thing. representation contests cost money, and the BLE and BLF&E have now gone through two of them without the challenger getting much for his money. For another, both unions may well want to back off and take stock. And for a third, both are going to be increasingly involved—the rest of 1965 and on into 1966—with management-labor affairs, including the fireman case and the economic notices which will be coming up. ■



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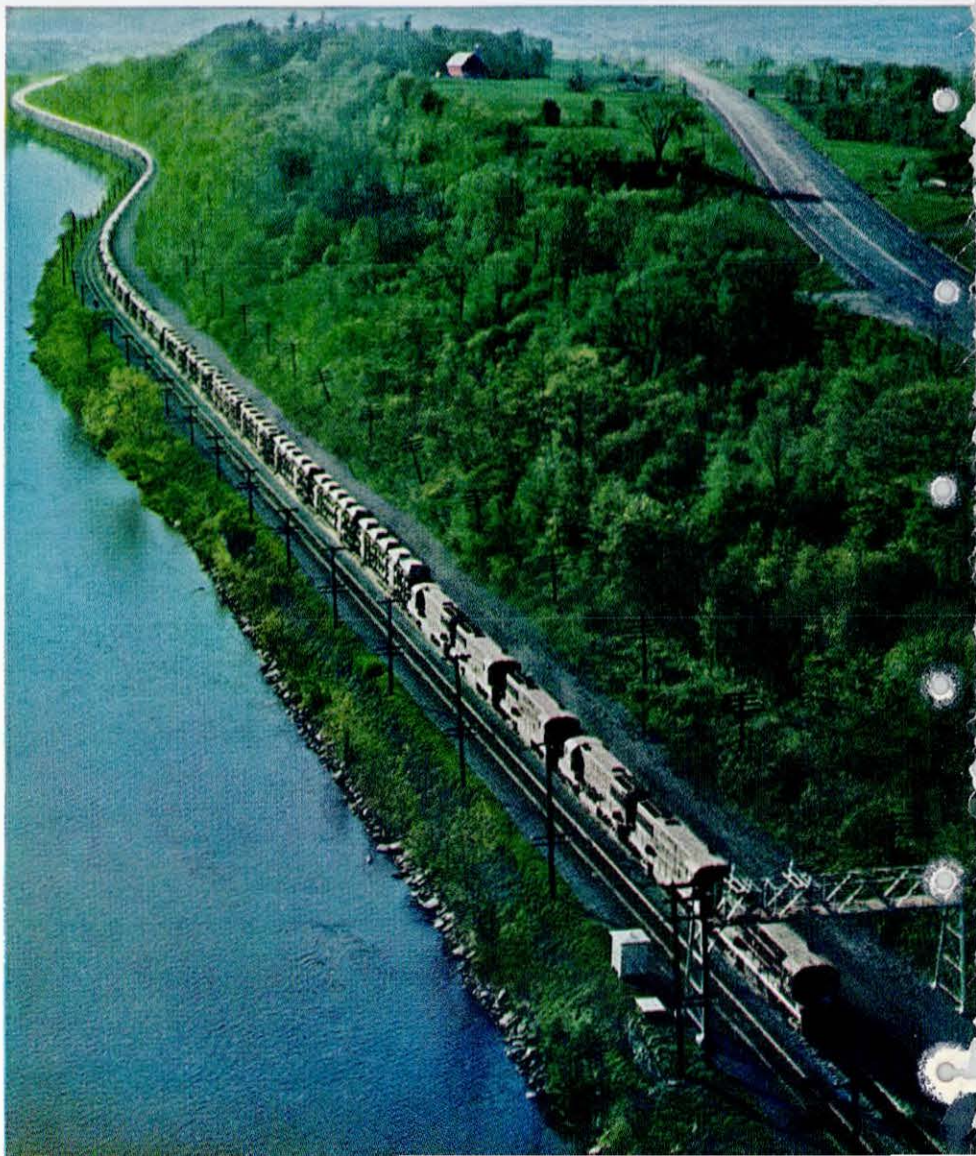

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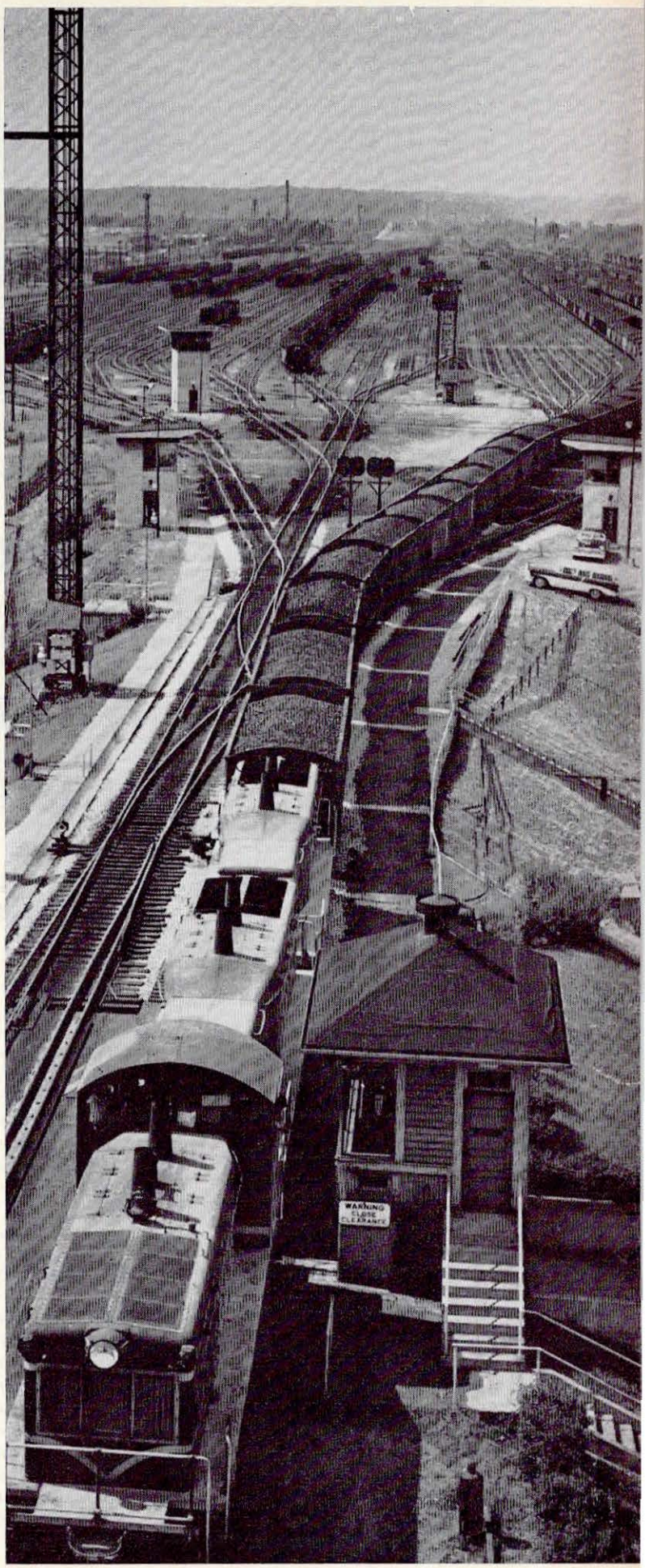
COAL:

New energy sparks up an old fuel



The U.S. coal industry, which in recent years had the depressing experience of watching its markets go down the chute one at a time, is out to prove that there's still a lot of life left in the old fossil.

Beset by many of the same problems that confronted the railroad industry—changes in technology, shifting market patterns—the coal men have had to scramble to shore up sagging demand for their product. The switch by the railroads to diesel power knocked out a hefty portion of the coal market; the home owner's preference for oil and gas over a do-it-yourself coal shovel and a coal bin for home heating cut demand for coal even more; the specter of atomic energy-powered electric plants and the competition of imported residual oil all have made their mark on the industry.

• **But things are looking up.** Today, the coal industry, with the railroads running interference for it, feels that at last it's back in the ball game. Advances in both the science of mining and in railroading—plus some

◄ Circle 10 on reader service card

heads-up thinking by the men who run both industries—have created new and growing markets for the fuel. The future of coal is beginning to take on a warm, profitable glow for both industries.

Perhaps the railroads' biggest contribution has been the technological miracle it has achieved in the handling and transportation of coal via the unit train. The economy of operation in hauling tremendous tonnages of one commodity in fast service has given coal a competitive foot-in-the-door to both U.S. and world markets. Coal shuttle operations to U.S. power plants are benefitting the electric utilities by $100 million a year, a saving that's being passed on to the customer.

● **Other market prospects.** While keeping its miners busy supplying its long-established customers, the coal producers have been probing around for new outlets for their product. Research has been going on for some time to find a cheap way to make gasoline and other liquid fuels from coal. The processes are already known, the big hurdle remaining is cost factor. But coal men hope to crack that problem soon, and one of the big producers, Consolidation Coal Co., has a contract with the Office of Coal Research to further the research in a $3.5-million pilot plant soon to be built in West Virginia.

"The significance of this development," says Consolidation's John Corcoran, "is most encouraging. The present consumption of liquid petroleum products as fuel in the United States is about 11 million barrels per day, of which half is gasoline. By 1980 the total daily consumption should rise to 17 million barrels. If coal can capture only 10% of the gasoline market by 1980, it will result in a new coal market of 175 million tons per year."

Coal researchers are also working on the development of pipeline-quality gas from coal to make it economically competitive with natural gas; they're working on the feasibility of coal-powered water desalinization plants, seen as a tremendous market potential in an increasingly thirsty world; and they're working on the use of coal in the treatment of sewage to control the growing problem of stream and lake pollution across the nation. This will be checked out in an experimental operation planned for Cleveland, Ohio.

The new attitude of the coal industry was summed up by one of its spokesman:

"The coal industry," he said, "has a willingness to fight back . . . an ingenuity to overcome opposition, to meet and solve production and transportation problems, and to go on to attack in a determined effort to regain markets lost or to create new ones."

PART OF THE GROUP that took the press tour of railroad facilities, coal mines and power plants prepares to board one of the planes used on the trip.

COAL SHOWS NEW ENERGY

Railroads keep coal in the running

Team effort, a press tour learns, is making the fuel competitive.

THE C&O's Computer Center and Car Location Information Center in Huntington, W.Va., was the first stop.

"See America's Energy" was the theme of a press tour through three coal states sponsored by the National Coal Policy Conference, Inc., a body composed of coal producers, coal-hauling railroads, the United Mine Workers of America, utilities, and other industries. Edward Donlon, news editor of Railway Age, made the tour. Here is his report.

● **Sunday noon.** The 60 members of the tour, airlifted out of Washington's National Airport in three DC-3s, headed west for the first stop—Chesapeake & Ohio's operating headquarters in Huntington, W. Va. On board were news writers from the U.S., foreign and trade press, government officials from various branches ranging from the State Department to the Bureau of Mines, three Interstate Commerce Commissioners, and about half a dozen foreign embassy representatives whose countries do a lot of their coal buying in the U.S.

"Our purpose in sponsoring this tour," said NCPC President Joseph E. Moody in a statement in press kits handed out at the airport, "is to demonstrate the dramatic new developments which are taking place in the modern American coal mining industry." And, he added, since "a low-cost, efficient transportation system has helped maintain coal's position as America's No. 1 energy fuel, the tour will include visits to both rail and water transportation facilities."

The planes flew low over the hilly West Virginia country surrounding Huntington's Tri-State airport, circled and then set down at the small field. A C&O delegation was waiting to usher the tour onto buses for the ride downtown to the road's operating headquarters. C&O-B&O Vice President Owen Clarke and U.S. Sen. Jennings Randolph (D.-W. Va.) welcomed the tour members to the C&O and the State of West Virginia, respectively.

"Gentlemen," said Robert C. McGowan, C&O-B&O vice president for planning, "it may appear that you are merely sitting in a conference room in a building in a city in West Virginia . . . but you're also sitting on top of one of the world's richest treasures—billions of tons of coal in the mountains of West Virginia, Kentucky and Ohio, all lying within a radius of 150 miles of where you are right now." The tour members were told that they were also sitting at the operating nerve center of the C&O-B&O, originators of a fifth of the nation's coal.

"Railroads are as old as the coal industry itself," McGowan pointed out, adding that although the railroad industry is 135 years old, "it is a lot younger today than it was yesterday."

"We have to be modern. As partners of coal, we share coal's challenges, and chief among them is making coal competitive. Railroads have been able to give coal lower transportation costs through more efficient, low-cost and continually improved service. And they have done this despite the rising costs of manpower and material."

McGowan then turned on a projector to illustrate his point with slides. He showed some color photos of 2,500-hp SD-35's "specially designed for the kind of heavy-duty that coal transportation requires" and hopper cars, including some 85 and 100-ton giants. "Together C&O and B&O have nearly 84,000 coal cars, which have a replacement value of about $800 million, and this year we will put another 2,900 cars in operation at a cost of about $18½ million," he told the press group.

He said C&O was a leader in the railroad industry in applying electronic data processing to the everyday business of running a railroad.

"When you put it all together—modern motive power, cars, tracks, computers, hot box detectors, CTC—you really have one big machine built to handle coal."

Members of the tour were then taken through C&O's computer center, which, even on a Sunday afternoon, was humming away, digesting, transmitting, recording data on the road's operations.

Exports to double

During a coffee break in the building's cafeteria, DeWitt Snyder, president of the Coal Export Association of the U.S., Inc., predicted that American coal exports would double in the next decade—jumping to 70 million tons.

"The coal industry has been transformed from a pick and shovel operation to a highly automated industry," he said. "Our position has been helped considerably by this country's superior natural resources, the foresight and cooperation of railroads in meeting the challenges of the last two decades, and also by the continued excellent cooperation between management and labor."

Snyder told the tour group, which included economic attaches from six foreign embassies—Argentina, Belgium, Germany, Great Britain, Japan and The Netherlands—that American coal has gained acceptance in foreign energy markets as a reliable source of fuel.

• **Sunday evening.** It was back in the buses again for a ride through Huntington, across the Kentucky state line and go out to C&O's vast classification yards at Russell, Ky. From the roof of the operations building in the yard tour members watched as hoppers loaded with coal from the Kentucky and West Virginia fields rolled past the hump one at a time to be made up into a northbound coal train. Waiting on a siding in nearby Ashland, Ky., was a special C&O sleeper that was to carry the tour, following the coal train through the night to arrive in Toledo for unloading at dawn.

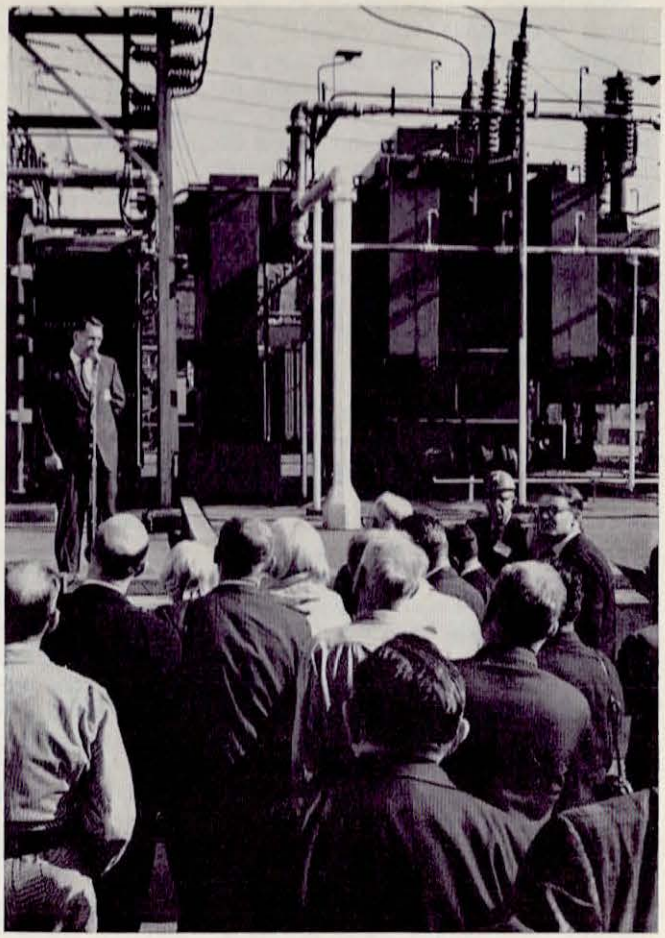
Some 1,900 coal loads move through the Russell Yard every day, 1,700 of them moving west or north. Toledo, the destination of the coal train and the press tour special, is the C&O's transshipping port that dumps more than 18 million tons of coal during the lake season.

• **Monday morning.** During the night the press train arrived in the yard adjoining the railroad's Presque Isle docks. Debarking, members of the tour were greeted by 30-degree temperatures and a bone-chilling wind from Lake Erie as they were directed to a car dumper that was already unloading the coal train.

Two 90-ton hoppers at a time were rolling into the rotary dumper, their cargos dropping down to a conveyor belt that was carrying the coal a few hundred feet down the dock to a wait-

ASSEMBLY OF A UNIT COAL TRAIN got the tour's attention at the C&O's Russell, Ky., yards.

ICC COMMISSIONERS Howard G. Freas (left) and Rupert L. Murphy (third from left) got a first-hand look at mining.



COAL'S IMPORTANCE to the electric utility industry was explained at a giant power plant in Ohio.

ing lake collier. The coal ships serve various utilities and industries throughout Michigan and Illinois.

From Toledo the group flew back to West Virginia again, this time to Wheeling, where buses carried them out to the Ireland Mine of the Hanna Coal Co. Division of the Consolidation Coal Co., just outside of Moundsville.

A train carried the tour some three miles through the blackness back into the side of the mountain where mining operations were in progress.

Chewing into the four-foot-thick Pennsylvania coal seam that runs for hundreds of square miles throughout the area was a ponderous, tracked ripping machine. The head of the machine, like a giant cylindrical buzz saw, clawed at the wall in lurches. Rippers are designed to work in coal seams up to 117 inches thick and to produce coal at a rate up to 5½ tons a minute. One man was at the controls, and a handful of miners around him performed ancillary services, drilling holes in the ceiling to bolt up beams for overhead support as the machine gouged itself a tunnel.

At the Ireland mine, a six-man shift, working 5½ hours at the face, produces 535 tons of coal. It was pointed out that, in just the last 10 years, the industry's output-per-man day has jumped from 9.47 tons to 16.84 tons, and the average mine price of coal per ton has dropped from $4.52 to $4.45.

NCPC President Moody said the U.S. coal industry has been able to keep reducing the price of coal at the mines because management has been willing to spend heavily for sophisticated production machinery, and the United Mine Workers have agreed to mechanization to help their industry survive and to meet the challenges of competitive fuels.

Railroads have done much to keep coal in the running, too. Transportation rates have been cut dramatically as railroads have arranged faster scheduling, quick loading, unloading and turnarounds, and put better equipment and facilities to work.

● **Monday night.** Principal speaker at a dinner for tour members was John Corcoran, executive vice president of Consolidation Coal Co., the tour's host that afternoon in the Ireland mine.

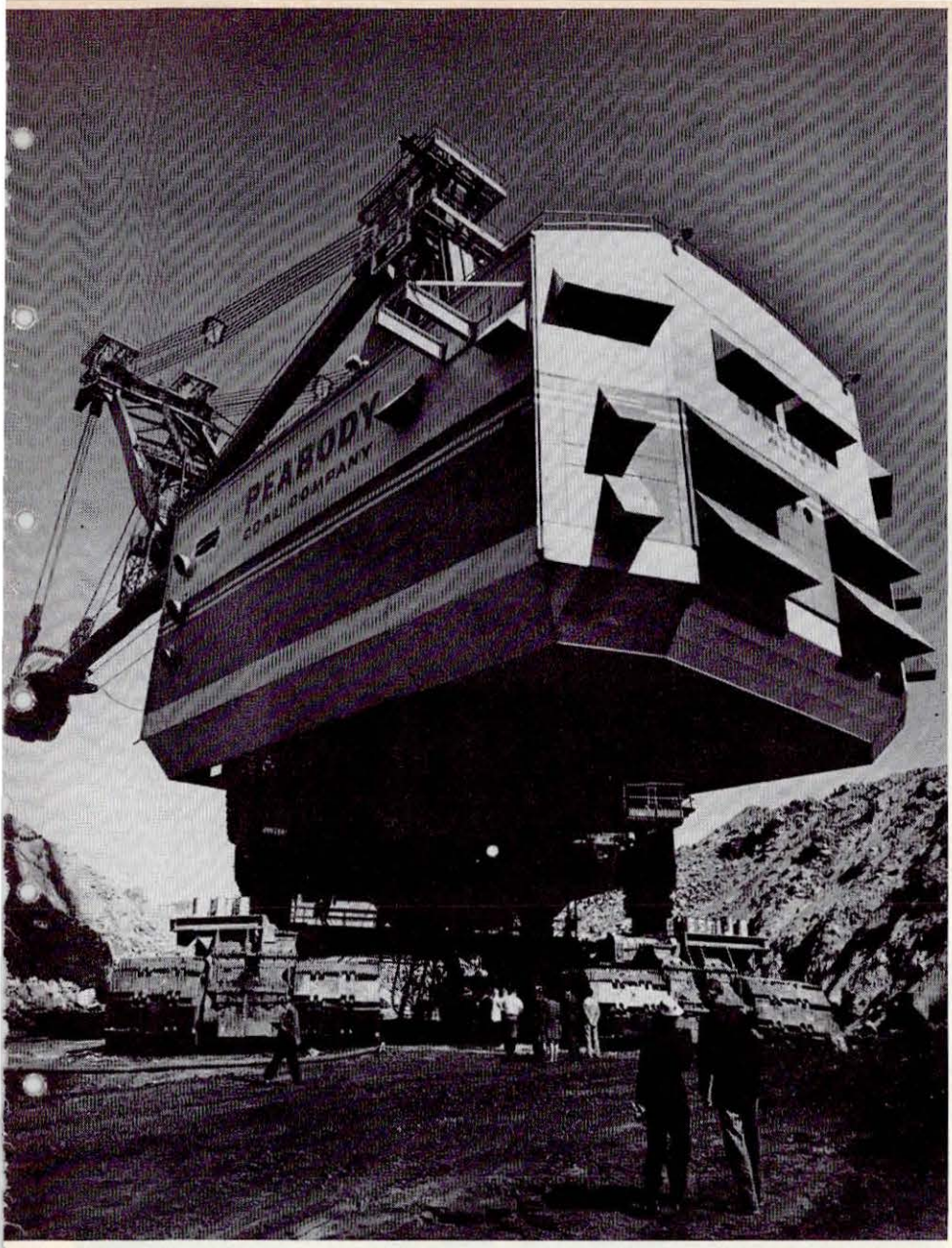
He praised the railroads for the part they have played in helping the coal industry to lower fuel costs, adding that both industries must work together to compete with nuclear power.

"To achieve a delivered price that will make coal competitive with nuclear power," he told the audience, "both the coal producer and the affected railroad must do everything possible to minimize their costs.

"For the railroad, this means that it must obtain the maximum car and power utilization; it must insist on fast loading and unloading; and it must eliminate frill services such as weighing, blending, and switching. Only by effecting all such cost savings can the railroad publish the low rate necessary to meet the delivered price target. In a number of cases these new rates require us to load 10,000-ton trains in as little as four hours, and to move our coal on what is literally a passenger train schedule."

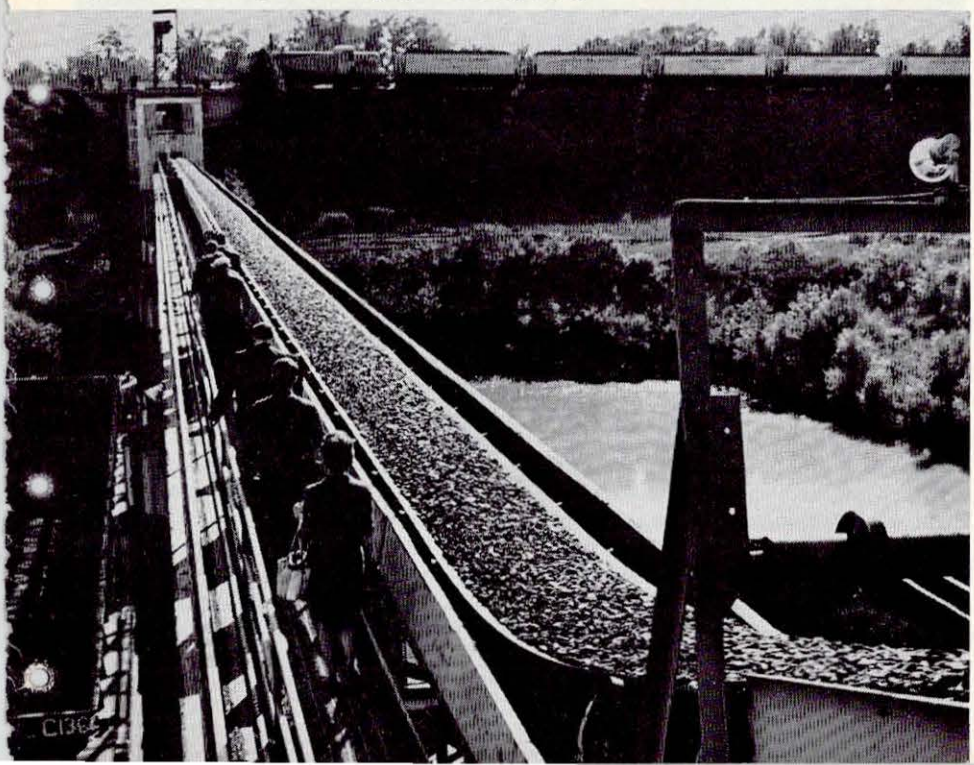
Corcoran said that if coal companies can't successfully negotiate for fuel contracts with new power plants, atomic power will.

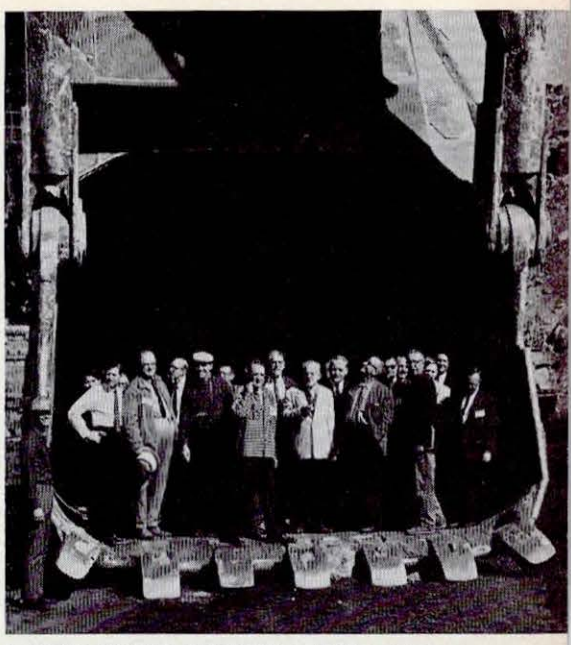
"And if atomic power prevails," he maintained, "these plants will be lost forever to coal, and the traffic lost forever to railroads. But if the present rate policies and operating practices can be continued—and indeed improved—I'm confident that the coal industry and the railroads can look forward to a



A MONSTER SHOVEL used for strip mining in western Kentucky dwarfs tour members, foreground. The shovel clears overburden to expose coal seams.

A MINE TRAIN in the background has emptied its hoppers into a conveyor belt system that loads river barges, left foreground.





A DROP IN THE BUCKET is all the press group amounts to in the cavernous interior of the shovel.

continued growth in the utility market."

● **Tuesday morning.** The press group was back in the air again for the third day of the tour, headed west to the strip mining regions of western Kentucky. The destination was the Sinclair Mine, a surface operation at Drakesboro, Ky., and the site of the world's largest self-propelled land vehicle, a 115-cubic-yard monster shovel large enough to dwarf a 20-story building.

Purpose of the shovel is to remove "overburden" or earth covering close-to-the-surface coal seams. With its reach of 420 feet—more than a city block—it can carve up the side of a hill in bites of 200 tons each, creeping forward on eight crawler treads, each over eight feet high. After it has cleared away the earth down to the coal seam, smaller shovels follow along behind it to dig up the fuel and load it into waiting trucks.

After leaving the open pit mine, members of the press group toured reclaimed strip mining areas where the Kentucky Reclamation Association (a group sponsored by the coal companies) last year planted 3.5 million trees over 8,000 acres of land. Ponds created by the mining operations are being developed for recreational purposes.

● **Wednesday morning.** Flying back to Washington, tour members pretty much agreed that the coal industry is indeed showing new life in its fight to remain a competitive fuel. What the participants saw was dramatic, impressive and encouraging—methods which are revolutionizing the production and distribution of an energy source vital to the nation's economy.

UNIT COAL TRAINS have revolutionized coal-hauling practices and have put coal back in the competitive race.

COAL SHOWS NEW ENERGY

Getting the goods to market

Railroads are the undisputed champs when it comes to carrying coal—some 70% of all the fuel mined is moved by trains—but they're hard at work just the same to be sure the title stays with them.

With coal reserves estimated at 1,660 billion tons, the railroads can have a long career in the field if they stay on their toes, industry leaders agree. Today, coal accounts for 25% of all freight tonnage hauled by railroads, and it produces 12½% of all freight revenues.

In dollars, it's big money. Norfolk & Western, the nation's leading coal-carrying railroad, in 1964 hauled 87 million tons of the black fuel and earned $217 million doing it. Thus far this year the road reports that it's breaking all of its previous weekly and monthly loading records.

Chesapeake & Ohio, likewise, earned a good part of its 1964 net profit of $42 million by being in the coal business. Its operating revenues from coal and coke traffic came to $174 million. Baltimore & Ohio earned more than $102 million

MULTI-MILLION DOLLAR expenditures have been made by railroads to modernize coal-handling facilities. Above, Norfolk & Western's giant Norfolk pier.

• **Those wonderful unit trains.** Unit and shuttle coal trains are the aggressive weapons the railroads have devised in their battle to help the coal industry stay in the competitive fuel fight. Among the roads now using them are the New York Central; Baltimore & Ohio; Burlington; Gulf, Mobile & Ohio; Illinois Central; N&W; C&O; and Louisville & Nashville.

The first shipper-owned unit train, provided by the Pennsylvania Power & Light Co. and shuttled between mines and PP&L power plants by the Pennsylvania, has proved to be so successful that the power company has just announced plans for a second train.

"It wasn't many years ago," says one coal executive, "that we believed that if coal freight rates were as low as 1¢ per ton mile, we would have reached a significant milestone. Today, coal is moving under rates that return only .5¢ per ton mile."

He added that if a coal car went 400 miles and returned in two weeks, covering about 20-25,000 miles a year, everyone was satisfied.

"Today we have rates in effect that call for a 400-mile market to be served in 48 hours, and the cars to travel some 120,000 miles a year. We commend the railroads for their farsighted approach to this problem."

● **Spend money to make money.** The railroads have spent millions to improve coal-handling facilities at both inland and coastal ports. In the Hampton Roads, Va., area for example, more than $50 million has been invested to improve coal-loading facilities for ocean-going vessels.

When ships first started carrying coal overseas they were in the 5,000-7,000-ton class. Now, ships as large as 70,000 tons are moving coal, and further improvements in the port should permit coal piers to accommodate proposed 100,000-ton coal ships. The mechanized facilities allow rapid handling of coal trains, and a yard full of coal cars can be emptied into ships in 24 hours.

The seemingly endless coal trains that move night and day to new multi-million dollar coal handling facilities at Norfolk, Newport News, Baltimore and other ports are supplying a whole new chain of worldwide markets. By 1985, estimates are that European nations alone will be needing 850 million tons of coal annually, of which the U.S. is expected to supply a large portion.

N&W a heavy spender

Norfolk & Western, the nation's great coal-carrying railroad, spends about $1 million a week in a continuing program to construct new 95-ton roller bearing hopper cars. Up to merger a year ago, coal represented almost three fourths of the road's traffic, and a large portion of the $800 million spent on new equipment and facilities since the end of World War II was dedicated to the more efficient and economical transportation of coal.

● **A big year coming up.** This year, U. S. coal producers expect to dig out of the earth and sell more than 500 million tons of coal—enough to fill a freight train 62,500 miles long. This will be the first year since 1956 that the industry has reached this production level. More than 200 million tons of this sizeable pile of coal will be used to generate 68% of the nation's steam-generated electric power. By 1970, power plants are expected to be shoveling some 500 million tons annually into their furnaces.

The foundation of modern power has been coal, and both the railroads and the coal industry believe that the expenditures for million-dollar coal docks, hopper cars and other related facilities are being built on a solid foundation—that coal will be around for a long time to come as a leading energy fuel. ■

RAILROADING AFTER HOURS WITH JIM LYNE

LYNE

A CENTURY OF IMPROVED TECHNOLOGY—Changes in technology are not new to the railroads. I was reading in R. C. Overton's book "Burlington Route" about the change-over from wood to coal as locomotive fuel, which was well on its way at the time of the Civil War. The change was made because management found it was costing 19¢ per locomotive-mile for wood fuel and only 10¢ for coal.

In 1901 net tons per freight train on the Burlington averaged 200 and in 1914 the average was 484. The result was that train-miles declined almost 14% while revenue ton-miles rose 120%. (Incidentally, in 1964, Burlington's average tons per train were more than triple those of 1914.)

It is only by constant effort to increase the production from items of fixed expense (which the cost of operating a train is, largely) that railroads have been able to pay higher wages and, at the same time, hold their rates at a competitively low level.

WHAT'S A MANAGER WORTH?—The Burlington history reveals that the late James J. Hill in 1904 secured the services of Daniel Willard (then operating vice president of the Erie) to head the Burlington's operating department; and the inducement was a salary of $50,000 a year.

That was a lot of money (and no income taxes) in those days, for a departmental executive. But James J. Hill was a shrewd businessman and he doubtless realized fully that a superior manager differed in performance from a mediocre one—not by thousands of dollars, but by millions. In the naming of chief executives there is still a free competitive market.

CHEERFUL DR. KEYSERLING.—Leon Keyserling, formerly chief economist for Mr. Truman when he was President—and latterly a spokesman for some railway unions opposed to railroad mergers—has been exulting recently over the improvement in railroad traffic. In his view, this increase in freight business proves the lack of necessity for railroad consolidation.

What Dr. Keyserling neglects to point out is that railroads are still earning only a little more than 3% on their investment—less than half the rate earned by the electric utilities and about 25% of the rate of return in the manufacturing industry.

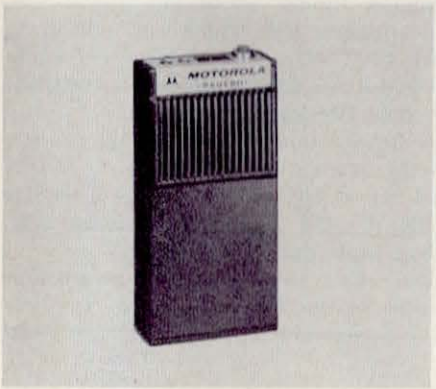
Retrenchment (firing people and abandoning service) is not the goal of railroad mergers. Instead, the purpose is to improve railroad service and make it more economical—and, hence, to increase traffic and (in the long run) to increase railroad jobs.

Adjustment of plant and employment to meet changing demand (less here, more there) is the way successful businesses stay successful. This is a principle that railroads cannot ignore—any more than chain stores or gasoline retailers can. When an improved highway is opened, most trucks use it, and curtail their use of slower and more expensive routes. Can railroads afford to do otherwise, and still stay competitive?

FOOD PRODUCTS IN NEW ENGLAND—Some figures put out by the Transportation Census people (RA, Oct. 25, p. 31) indicated that New England railroads were getting a much lower percentage of food products' tonnage than railroads in some other areas. I have a letter, from New Haven's Charles Ragland, pointing out that almost 90% of New England's production of food products is short-hauled—hence more likely to move by highway, than in areas where hauls are longer.

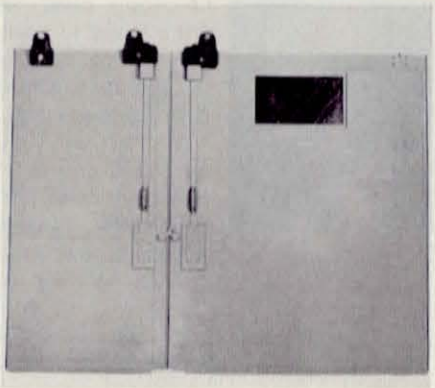
I did not mention the figures to be in any way critical of the New England railroads, but merely to call attention to the facts. The railroad situation in that area is particularly difficult for many reasons—not the least of which is the federal government's superhighway program. They are getting 1965 highways up there to parallel some railroads which haven't changed much, as to line and grade, in a century. But the favored highway builders have the money to spend on modernization, whether traffic volume justifies such outlays or not. The term "political economy" was created long ago, but it is applicable to more and more situations all the time—especially in transportation facilities built by government.

NEW PRODUCTS REPORT



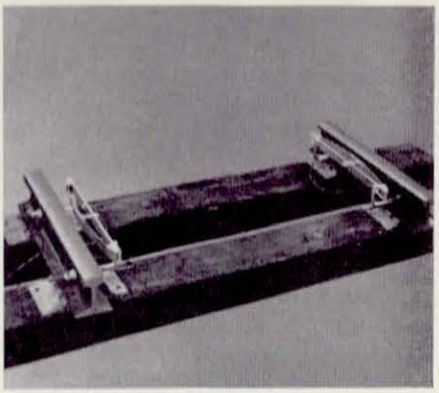
Radio Paging (RA-1)

A new radio paging receiver that weighs 11½ ounces provides both an alerting tone and a following voice message. A similar unit, weighing 9 ounces, provides only an alerting tone. Both units operate interchangeably on mercury (up to 90 hours) or nickel-cadmium batteries (12 hours full time). Systems using these radio receivers can provide paging covering in office buildings and in yard and terminal areas. *Motorola.*



Fiberglass Doors (RA-2)

OMC doors for express, mail, baggage and storage cars are constructed of polyurethane foam, bonded between fiberglass panels and bound by stainless steel. Widths are 3 to 7 ft, or may be specified. Doors can be supplied with OMC-Midland hardware which is AAR- and Post-Office approved. In tests from 40 below to 140 deg above zero at 1-hr intervals, no separation of bond between fiberglass, foam or framing was reported. *Outboard Marine Corp.*



Loose Wheel Detector (RA-3)

A new loose wheel detector, LWD-10, detects misalignment as a freight-car wheel passes the unit. An indicating relay is triggered which activates a spray gun to squirt an identifying dye on the misaligned wheel. The wheel detector can be provided with the necessary auxiliary equipment to transmit information regarding the misaligned car wheel to a nearby control point which can then initiate appropriate action. *Railroad Accessories Corp.*

Data Transmission Set (RA-4)

The 26C FM data set transmits at fixed rates of 2400 and 1200 bits per second over a standard 3-kc voice channel derived on cable, open wire or microwave radio. Transmission at 2400 bps is achieved with duobinary coding applied to a synchronous frequency shift keyed carrier wave. The duobinary coding also provides the basis for automatic error detection or quality monitoring during actual service. Transmission at 1200 bps is accomplished by synchronous binary frequency shift keying.

The new data set can be equipped for full-duplex, simplex transmit, or simplex receive operation with or without clocks, depending on requirements.

With typical noise conditions on a voice channel, the 26C will perform with an average error rate of less than one error per million bits of information. The internal error detection system detects errors introduced by transmission media, without introducing redundancy in the data.

The set is 3½ inches high, weighs 20 lb and can be mounted on a standard 19-in. rack. *Lenkurt Electric Co., Inc.*

Landing Gear (RA-5)

The Move-A-Gear landing-gear assembly moves forward and backward laterally a full 30 in., according to manufacturer. In forward position it eliminates tipping or nosing over when tractor is uncoupled. In backward position it provides clearance for tractor wheels when turning or maneuvering. A sprocket, which is turned by the same crank that extends and retracts the landing gears, activates the unit. *Binkley Co.*

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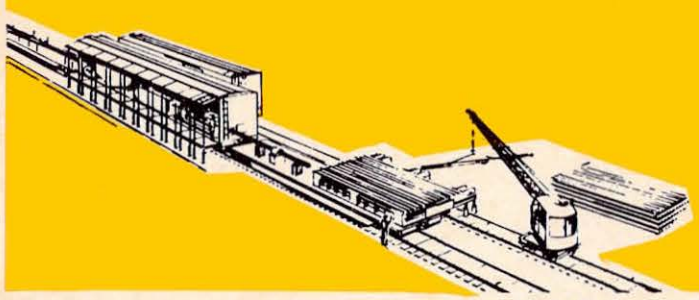

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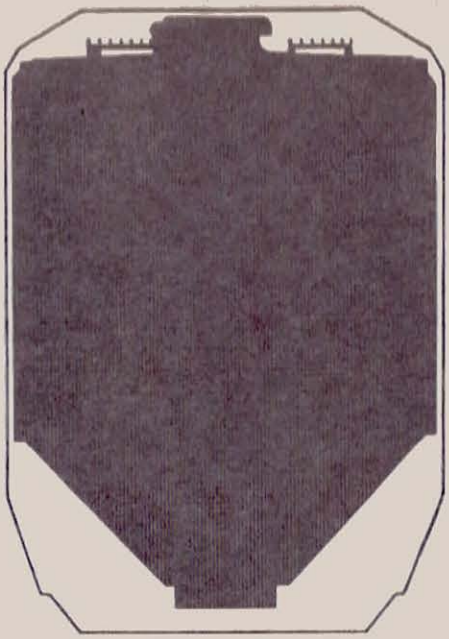

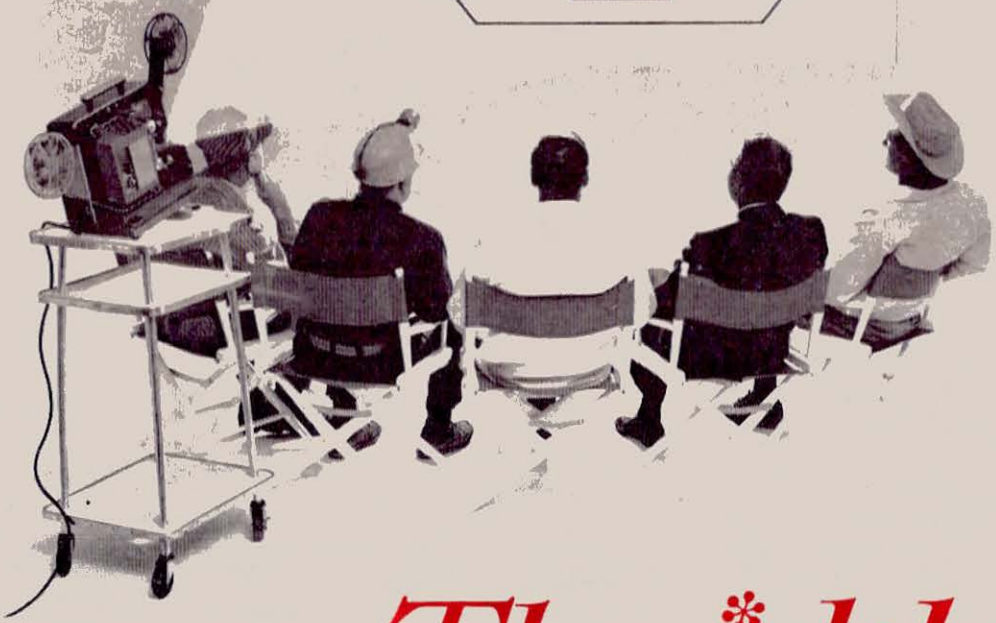

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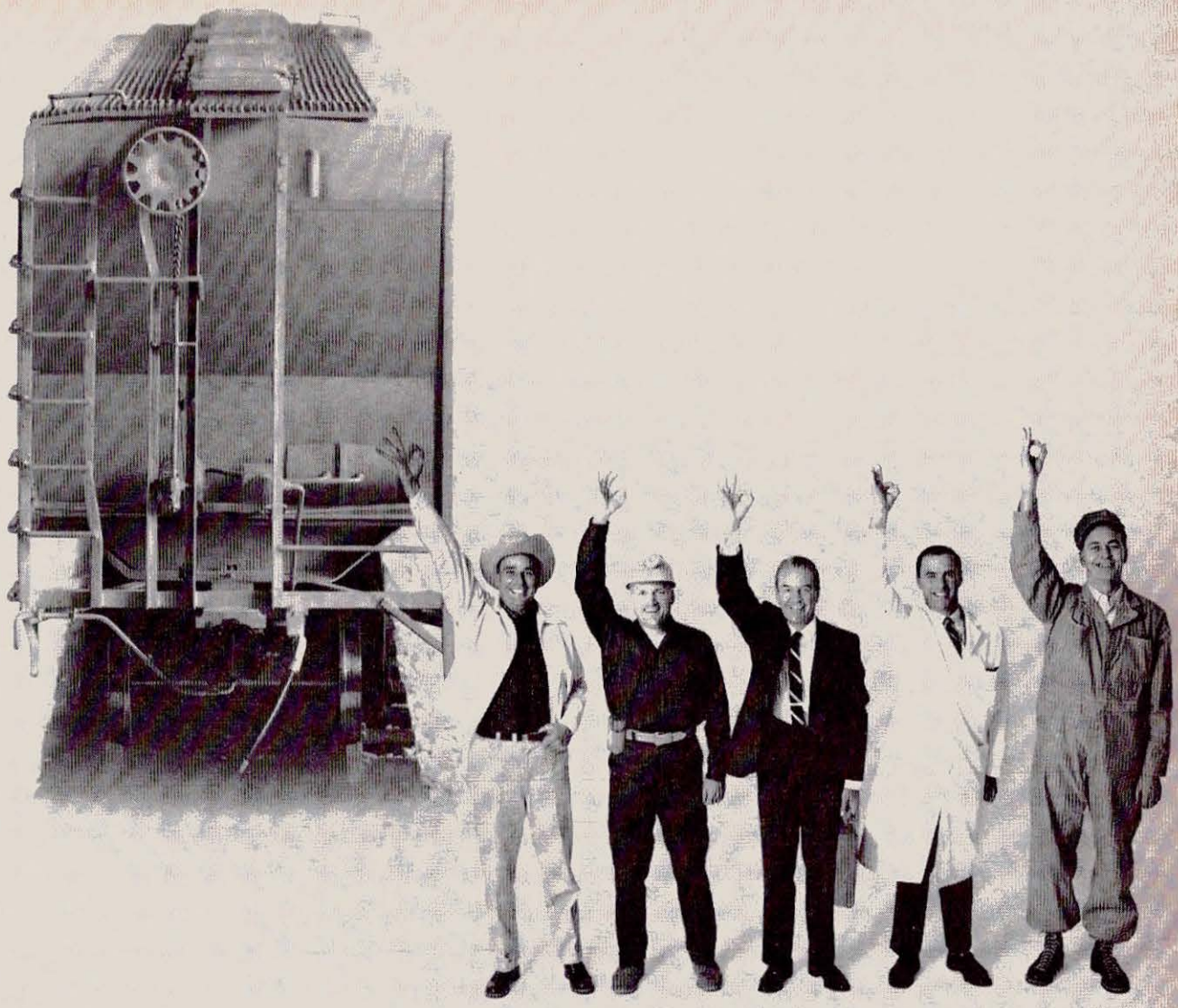
* *Railroads and their shippers of agricultural, chemical and mined products.*



the shape!

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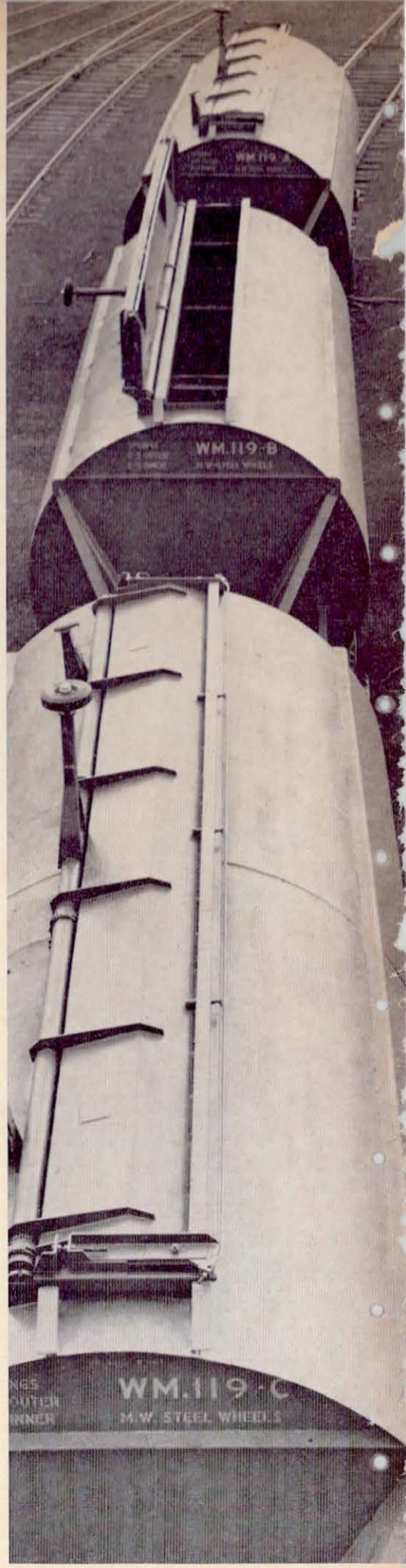
Ore cars load, unload on move

- **Non-stop loading and unloading are essential design features of tubular covered hopper cars for Wabush Mines.**
- **Reductions in weight and costs were achieved when concept of permanently coupled three-car sets was adopted.**



Iron ore concentrates are now moving 275 miles from Wabush Mines in central Labrador to the St. Lawrence River near Sept Isles, Quebec, in covered hopper cars capable of being loaded and unloaded while in motion. The 117 three-car units involved in this operation were built by National Steel Car at Hamilton, Ont.

The ability to load and unload moving trains of the new cars was not the only requirement confronting engineers of National Steel Car and of Pickands Mather & Co., the Cleveland-based mining company which manages the Wabush operations. The Labrador ore, specular hematite, is concentrated (until it emerges from the processing plant near Labrador City) as a minus-28-mesh powder containing virtually no moisture.

● **Weatherproof haulage.** It is then necessary that the concentrate be moved and delivered dry to the new pelletizing plant and port facilities at Pointe Noire, Quebec, which shares a harbor on the St. Lawrence with Sept Isles. The requirement for dry delivery called for some type of covered car to keep out rain and snow and to prevent the fine material from blowing out of the cars en route. Because large quantities of the concentrate can be lost through the smallest of openings, special attention had to be given to the doors in the bottoms of any cars built for the service.

Most of the haul from Wabush Mines to Pointe Noire is over the main line of the Quebec North Shore & Labrador Railway, which also extends further north to serve operations of the Iron Ore Company of Canada at Schefferville, Quebec. Because the cars would move in solid trains, seldom if ever uncoupled, it was clear that reductions could be made in first and maintenance costs and in the cars' light weight if they were to be permanently connected in sets of three.

● **Lightweight carbody.** Even before considering the weight reductions possible in inter-car connections and other appurtenances, the engineers considered the car structure itself. No car on the market at the time fitted itself exactly to the haulage requirements, P. F. Giesking, general superintendent of Wabush rail operations, told the Railroad Division of the American Society of Mechanical Engineers in Chicago last week.

What finally evolved was a cylindrical body shell with sufficient beam strength so the center sill between bolsters could be eliminated. This ¼-in. shell is strengthened by internal ribs which not only reinforce the structure but also serve as baffles in a lading which has almost fluid characteristics. Low-alloy high-tensile steel is used throughout the car.

The draft arm at each end of the car is topped by a ⅝-in. shear plate which serves to transmit pull and buff forces into the tank structure and to the side sills welded to its exterior.

● **Automatic cover.** A top hatch extends nearly the full length of the shell with a downward-flanged cover serving to prevent entrance of almost all snow and rain. This cover, not air-tight, is hinged on one side with its weight mostly offset by torsion-bar springs inside the torque tube from which it is cantilevered. The cover can be raised manually by one man.

The normal automatic operation of the covers at the Wabush concentrating plant involves exerting lateral pressure from a cam track against a small, rubber-tired wheel mounted atop a stub

RUBBER-TIRED WHEELS OPERATE DOORS

Stub mast holds cam follower which opens hatches on tops of Wabush cars (left); automobile wheels mounted within AAR clearances at side sills (below) operate the discharge doors. Tubular body and 40-degree slopes insure rapid unloading.

mast attached to the torque tube. As the pneumatic tire contacts the spiral cam track just in advance of the loading chutes, the hatch cover is rotated approximately 95 deg until it comes to rest against adjustable stops.

The upper edge of the open hatch cover also has a vertically adjustable cam track, similar to a bow string, that serves to contact limit switches, causing each of the five loading chutes to open in turn so that each contributes a portion of the total lading in the car. Beyond the loading chutes, a hatch-closing spiral cam track comes into play against the mast wheel, causing the cover to rotate into its closed position. The entire loading operation is done at a speed of 0.5 mph without detaching the locomotive, stopping, or backing the train.

● **Non-stop unloading.** Bottom doors are designed for non-stop dumping by means of central shaft arms that pull attached door links over center, locking them with a toggle action. A conventional automobile wheel and pneumatic tire mounted on the sides of the car—through a spindle, pinion, and worm-gear train—serves to power the central shaft that operates the doors.

The auto tires are within AAR clearances and 24 inches above the rail. Spur gearing in the drive system is arranged so that rotation of one wheel will cause the wheel on the other side of the car to rotate in the opposite direction. Articulated wayside ramps, pivoted on telescoping sleeves containing electrically controlled air cylinders, are programmed to contact the bottom of the tire on the right side of the car at between-the-rails pits, emptying the contents. Beyond the pit, a ramp on the other side of the track contacts the other wheel and train motion in the same direction then serves to close the doors.

Each car is weighed in motion by a scale before and after dumping; the second weighing is intended primarily to determine that all the car's contents have been discharged. If there would be a substantial "hang-up" on one side of the car, a dangerous operating condition could exist. Train speed is limited to 5 miles per hour through the scale; Giesking noted that otherwise dumping could be done at speeds up to 10 mph.

Carsets are 105 ft. long

Each of the cars is 33 feet 1½ inches over strikers. The three-car set is 105 feet long. Tank diameter is 9 feet 5½ inches inside; cubic capacity is 1,300 cubic feet. Each car will hold 208,000 pounds and itself weighs 55,000 pounds.

● **The 100-ton trucks.** In an attempt to reduce wear and cut stresses in rails and wheel treads, the 100-ton trucks on these cars are fitted with 38-inch multiple-wear, Class CR wheels. They also have 3 11/16-inch-travel springs and 6½- x 12-inch roller bearings. The machined 15-inch center plates, containing perforated composition liners, are sealed with rubber sleeves.

There are heavy-duty draft gears at both ends of all cars. Only the outer ends of each three-car set, however, are fitted with Type F couplers. Along with the weight reduction resulting from use of drawbars at the intermediate connections, it has also been possible to use only a single ABD air-brake control valve for the entire three-unit set.

● **Empty-load brake.** The brake system incorporates a mechanically actuated empty-load changeover device. Actuated by a wayside trip, this installation serves to relate braking power to car weight. Unit brake beams with integral cylinders and composition shoes are used on all cars. Some cold-weather problems experienced with the brake installations on two prototype cars were succesfully overcome in the production models.

Bottom doors without gaskets have been found to contain the semi-fluid concentrate adequately because they are installed at an angle smaller than the 32-degree angle of repose of the material. There are four 18- by 57-inch discharge openings in each car. Baffles around the openings keep water from entering the upturned flanges where lading could wick it up.

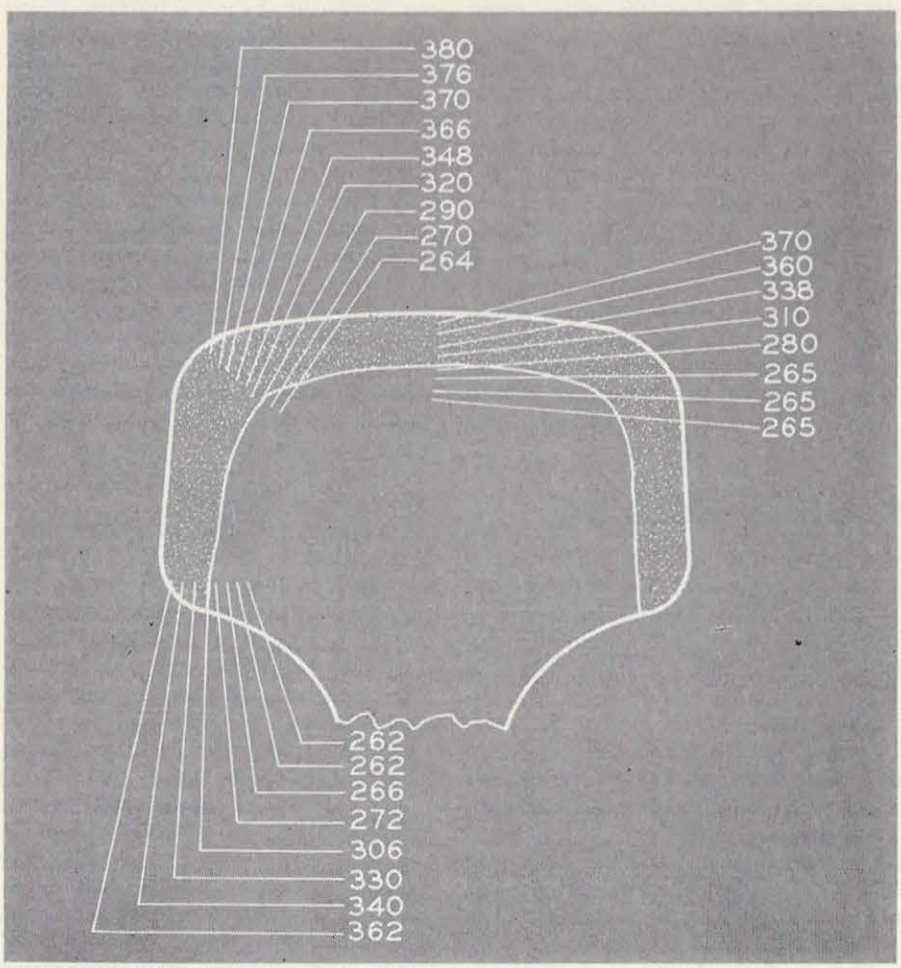
The cars have been subjected to longitudinal squeeze of 900,000 pounds and impacted at 1,360,000 pounds without adverse effects. Wabush engineers say that the weight reduction of the design, compared with a car of more conventional arrangement, is about 2,200 pounds. ■

Circle 14 on reader service card ►

RAILS FLAME HARDENED by the original Linde process are in service on L&N's Muldraugh's Hill, 34 miles south of Louisville.

Three 'hard rail' plants are reopened

The new Linde process for flame hardening rails incorporates improvements capable of meeting the stiffest specifications.



HARDNESS READINGS taken at 1/16-in. increments from typical samples of rail flame hardened with ¼-in. case by the Linde method.

Union Carbide Corporation's Linde Division has announced it is reopening its three plants for flame-hardening rails.

Behind that matter-of-fact announcement lies a story of a determined and costly struggle with a troublesome and complex problem involving a process Linde had recently introduced to the trade.

The story begins with the hard decision to shut down the three plants that had been equipped at considerable cost to apply the process, and to undertake a program of further research and development. It continues with the revamping of the plants to incorporate refinements developed as a result of the R&D program. And it ends with the announcement that, in returning the plants to service, the company is "positive it can produce the highest quality product possible."

● **A costly program.** As a corollary aspect of the story it can be noted that the research and development program was carried out at considerable cost. Says R. H. Bennewitz, sales manager of railroad products for the Linde Division: "I estimate that our recent R&D program has doubled our investment in the flame-hardening procedure. Further expenditures are anticipated."

Perhaps one of the more interesting aspects of the story is that the project, which was undertaken with a definite objective in mind, led to a conclusion that pointed in a different direction.

For the complete story it is necessary to go back to 1963 when Linde opened a plant at Ensley, Ala., for flame-hardening rails using a technique the company had developed over a period of years (RA, June 29, 1964, p. 46). In the process the rails are subjected to oxygen-natural gas flames and then quenched. The purpose is to produce rails capable of giving longer service on curves, through turnouts and in other heavy-wear locations.

During the first year the company reports that it processed 11 track-miles of rail at the Ensley plant, which is contiguous to the rail-rolling mill at U.S. Steel's Ensley Works. It further reports that railroads on which the rail was laid indicated satisfaction with the hardness pattern and the straightness of the rail.

Early in 1964 two additional plants were constructed, one at East Chicago, Ind., which is convenient to the rail mill at U.S. Steel's Gary, Ind., works, and one at Pueblo, Colo., location of Colorado Fuel & Iron Corp.'s rolling mill.

However, before these two plants had been completed something happened that caused Linde to pause for another

(*Continued on page 36*)

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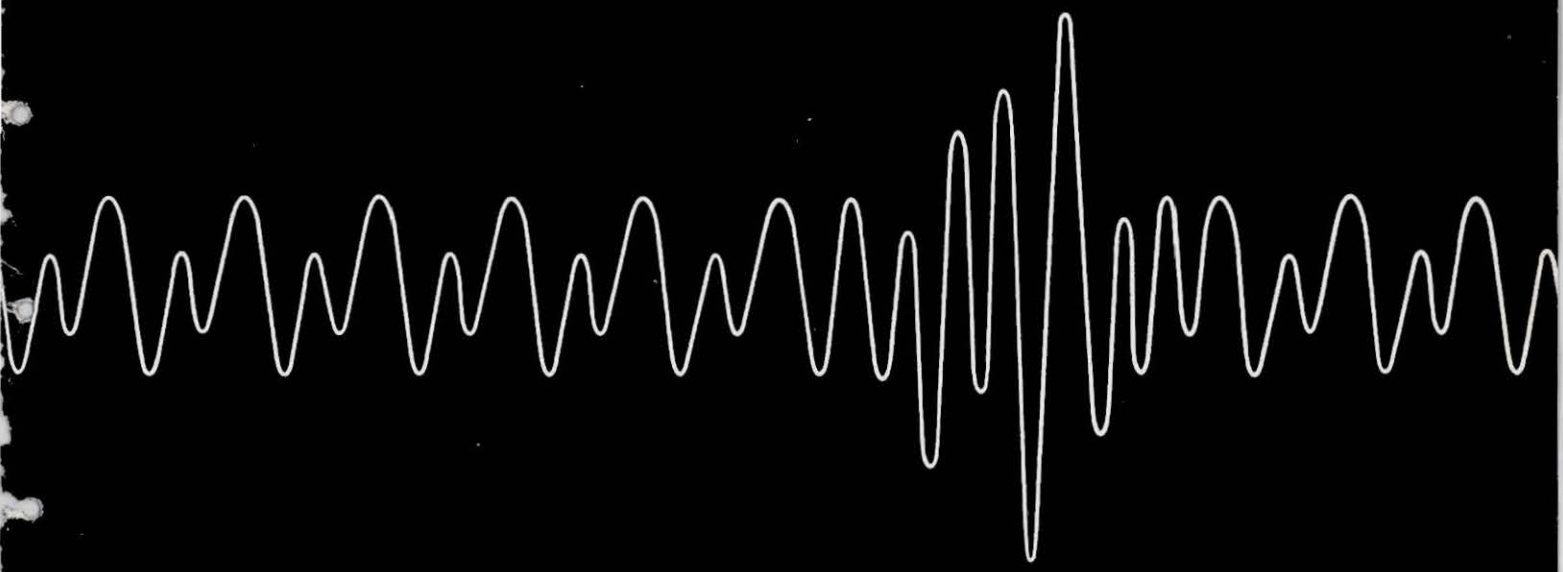
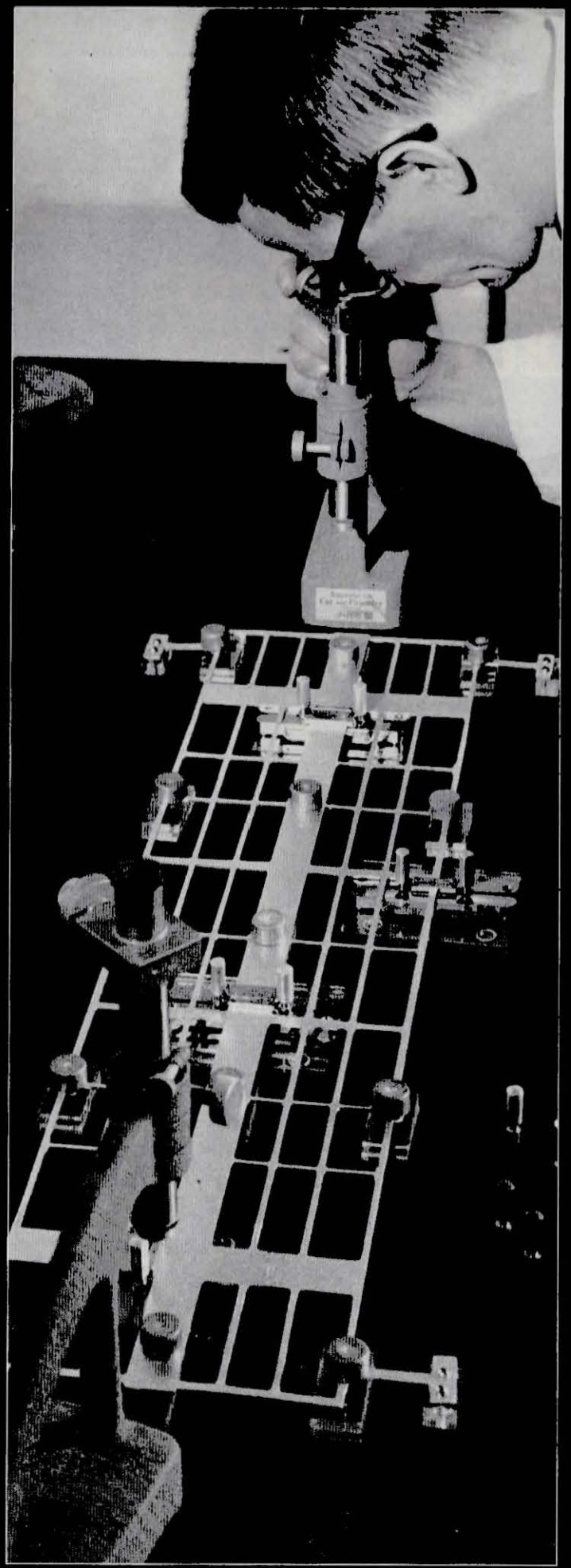
Moment of Truth in Boxcar Design



As ACF Precision Design™ boxcars undergo jarring impact tests, a battery of electronic devices records "the truth" of their ability to handle shocks and heavy loads in service.

The truth adds up to this. ACF Precision Design is a major new concept. It enables ACF to build you a boxcar with strength where you need it. Your car is never overdesigned or underdesigned. You get longer service life, lower maintenance, and up to 3 tons saving in deadweight.

How is it done? Read on the next two pages how ACF's Technical Center developed matched, pretested components, each precisely right for its structural function. Today the truth is out. Over 8000 ACF Precision Design boxcars are already serving 25 railroads all around the country.



ACF electronic testing, precision design assure components just right for your boxcar

ACF employs a basic boxcar design involving eight key structural components.

These components are standard. The collective attention of many ACF departments has been focused on perfecting them. Each component has been lab and field tested, improved, retested. Each is structurally compatible with the other. The specific requirements of **your** boxcar dictate the quantity, length and material grade of components to be used.

Thus you know in advance that you'll get the **right** boxcar for the job. The strength is where you need it. Through precision design and use of high grade steels, you save from 2000 to 6000 lbs. in deadweight.

You may choose 50-ft. or 60-ft. boxcars, fork lift truck loads from 12,000 to 60,000 lbs., interior equipment, load restraining devices. There are door sizes and locations to fit your needs exactly.

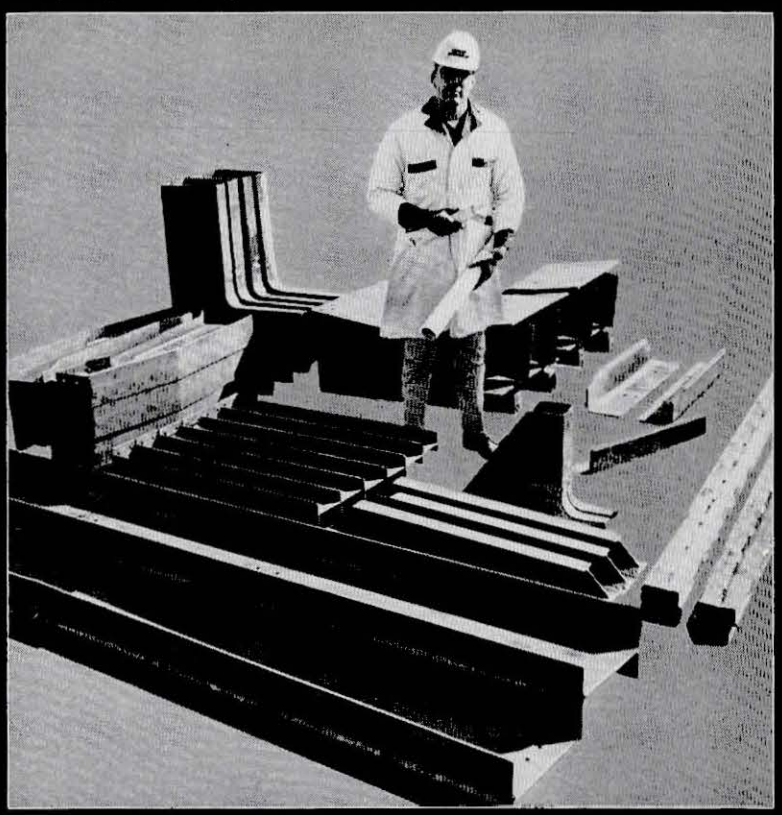
ACF evaluates metallurgy for strength and fatigue resistance. These mounted specimens are from bar, plate and sheet stock, and butt and lap-welded joints. They're polished to a mirror finish for metallographic examination.

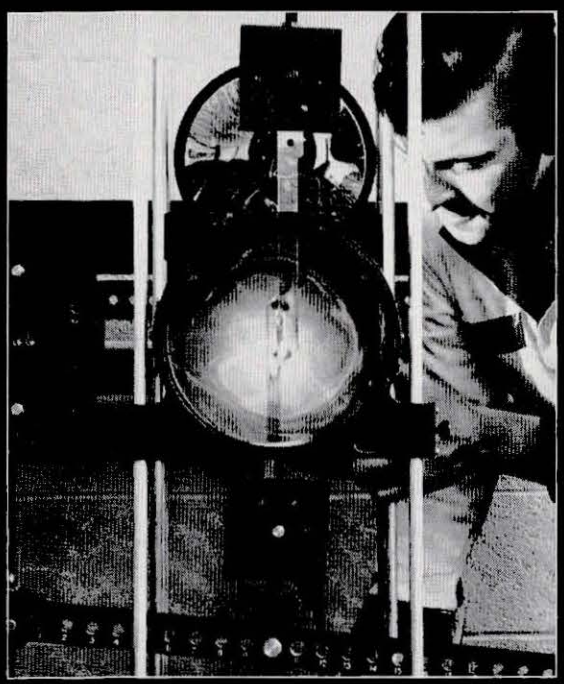
The test is simple for Precision Design components: will the material grade used perform better than any other economically available?

Underframe design is checked for load-stress forces. ACF technicians use transparent plastic models to pinpoint location and magnitude of stress in welded connections and areas of stress concentration. Result: optimum design with strength concentrated at critical points.

Components were tested in actual boxcar assemblies. Lab and engineering tests were backed by testing on the rails in completed boxcars.

Thoroughly pretested Precision Design Boxcar components are ready to go — into boxcars that give you unmatched performance, strength, light weight, higher payloads, complete flexibility.

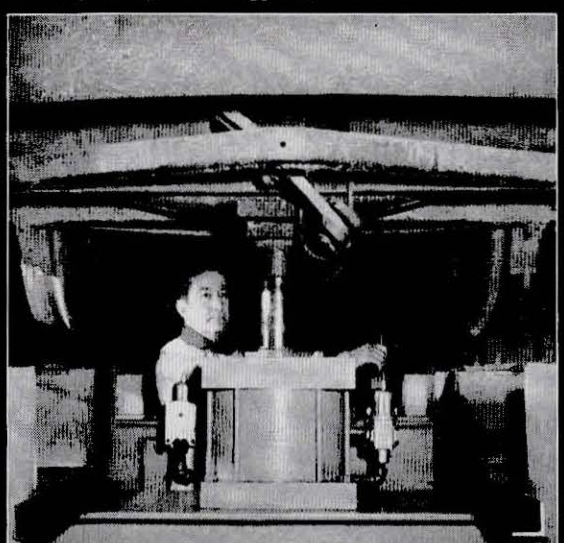




Materials are examined by polarized light. Even the most scrupulous surface examination is not enough for ACF Technical Center researchers. Here, a polariscope is being used to investigate stresses in lap-welded joints.

Cars are "tortured" on this exclusive ACF device. This 125-ft. ACF-designed testing device — the only one of its kind in the industry — accommodates a fully loaded boxcar.

It applies longitudinal, lateral and vertical loads, puts on a 1,250,000-pound squeeze, a 1,000,000-pound pull, tilts to simulate curves, and oscillates cars in fatigue tests that duplicate years of rugged service in weeks.



The ACF Precision Design concept can contribute to your profits. Have your ACF representative give you the full story. Call or write American Car & Foundry Division, ACF Industries, Incorporated, St. Charles, Missouri 63301, or our sales offices in Chicago, Philadelphia, St. Louis, San Francisco, Washington, D.C.

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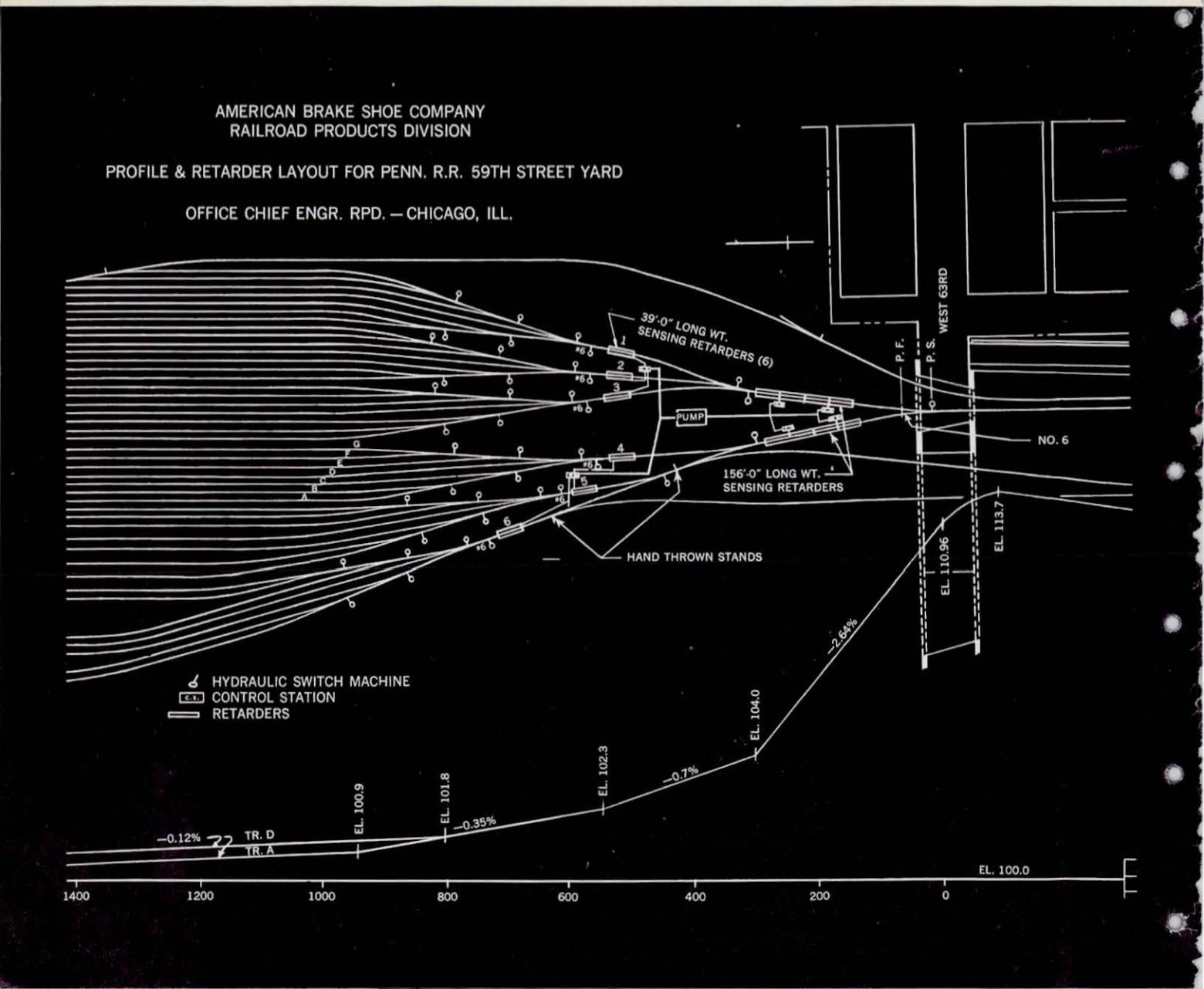
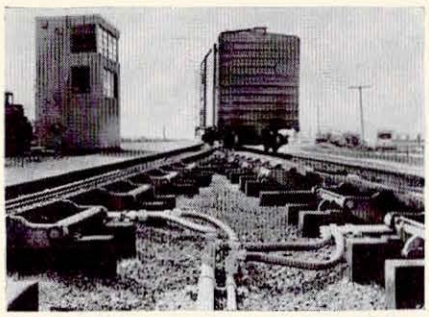
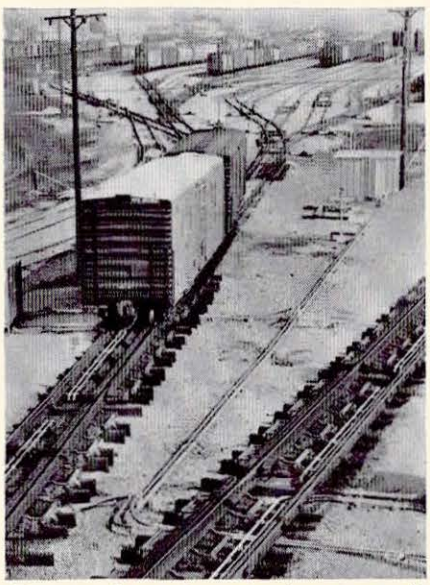
This new 42-track economatic yard combines two yards in one, can handle 1500 or more cars a day, cuts delivery time 12-24 hours, classifies cars twice as fast, reduces damage to cars and lading, improves safety.



Here's how Abex worked it out with the Pennsy.

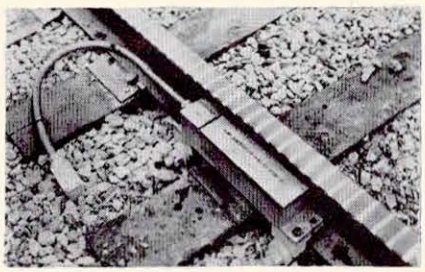


Car moves down −2.64% slope from hump to one of two 156′ speed-sensing master retarders.

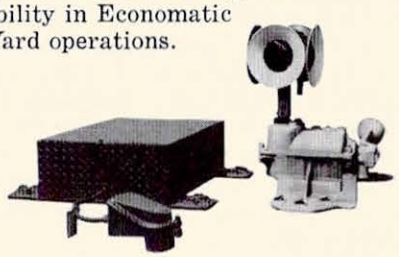


From each master retarder, cars roll down−0.7% to 0.35% slope to one of six 39′ speed-sensing retarders.

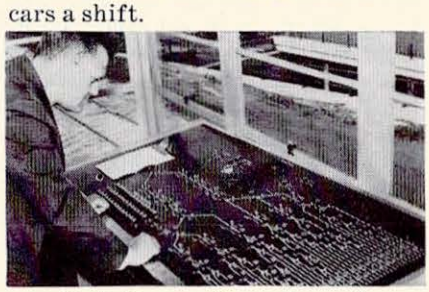
Key to speed-sensing retarders is this notched rail. Moving cars generate vibration converted by a transducer to a signal for speed control.



Hydraulic switch machine and No. H-22 stand permits manual, remote or automatic throwing for total flexibility in Economatic Yard operations.



From this one console, operator can control classification of 500 or more cars a shift.



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It's a Racor Economatic Yard.

Combining eastbound and westbound yards in one, it eliminates crossover cars, duplicate deliveries and duplicate tracks. And it cuts up to 24 hours from delivery times.

It's the Pennsy's second Economatic Yard.

The first, a 300-car-a-day yard in Grandview, Ohio, was the prototype of this 42-track facility. All in all, it's a fine demonstration of how Abex works with progressive railroads to bring maximum economy to operations.

If you have a yard that classifies under 2000 cars a day—you, too, ought to go Economatic.

Get in touch with Abex now.

Railroad Products Division, American Brake Shoe Company, 530 Fifth Avenue, New York 10036.

Abex

AMERICAN BRAKE SHOE

RAILROAD PRODUCTS DIVISION

Flame-hardened rail can cut maintenance costs

(*Continued from page 30*)
look at its process. From the AAR research staff and several customers came the suggestion that it might be advisable to produce a hardness pattern with a greater depth in the rail head.

● **Not a simple matter.** Putting this suggestion into effect involved a great deal more than merely making adjustments in existing plants. Extensive revisions would be necessary to strengthen the plants to handle the greater stresses that would be developed. More than this the company, desiring that the product would meet the highest standards of quality, decided to subject the process to further intensive study and research. Then came the decision to shut down the plants while the company worked on the problem.

Linde's leading research and development experts were assigned to the study. Months were spent investigating the problem. In addition, the company's technical staff made contributions relating to production equipment and techniques. The word from Linde is that the R&D program revealed new and significant processing procedures which Union Carbide is filing with the U.S. Patent Office.

● **Findings tested at Pueblo.** When individual findings from the program were ready for production testing, they were incorporated in the Pueblo plant. The result is that many refinements and modifications were introduced in the equipment and procedure, all of which are designed to help the company produce a product that will meet or surpass existing specifications for flame-hardened rail.

Extremely sensitive devices were added for better quality control, for regulating the rate of movement of the rail during the flame-hardening procedure, and for the control of numerous other variables. Special devices were introduced for controlling the hardening temperature within very narrow limits. Along with these and other refinements the various components of the plant were strengthened to permit heavier flame-hardened cases to be applied.

● **The case—how thick?** As a result of tests conducted on specimens flame-hardened with the improved equipment, the company has concluded that the heavier cases are not necessarily indicated.

Bennewitz explains it this way: "In the course of producing a heavier case meeting AAR standards we have made changes in the equipment and adopted quality-control revisions that produce a case in the thickness range of ¼ inch to ⅜ inch, which not only meets AAR standards but also appears to have highly desirable bi-axial stress distribution benefits."

But this does not mean that the company is not prepared to produce rails with heavier cases for railroads that desire them. Says Bennewitz: "Despite the fact that the testing program indicated that hardened cases in the ¼-inch to ⅜-inch range offer entirely acceptable results, Linde is prepared, when requested, to supply heavier cases." He adds that acceptable cases up to 1 inch in thickness have been developed.

● **What the lab tests show.** Linde's conclusions regarding the quality characteristics of rails flame-hardened by its improved methods are based on extensive laboratory testing. For example, flame-hardened rail samples were submitted to an independent research laboratory for examination of the residual stress distribution. From these tests the researchers concluded that an "ideal balance" of bi-axial compressive stresses had been obtained in the rail head.

Rolling-load tests also have been conducted. Two flame-hardened rail samples with a heavier case were placed on the rolling-load machine at the AAR laboratory. When the test was concluded, the rails had completed over 5,000,000 cycles without any evidence of failure.

Test with a thinner case

A rolling-load test is also being carried out on a rail sample with a thinner (¼-inch) case. The latest report on this test is that it had reached 2,100,000 cycles. The company calls attention to the fact that, at 2,000,000 cycles, a test is generally considered a "run-out."

● **Buys own testing machine.** This latter test, incidentally, is being conducted on Linde's own rolling-load machine which has been installed in the laboratory of a private testing firm. The company's reasons for acquiring the machine were explained by Bennewitz in these words:

"The AAR research staff and cooperating railroads have been very kind in sponsoring rolling-load tests. However, our development and research programs have become so intense that it is difficult to rely on the AAR's limited facilities. Therefore, to have a rolling-load test machine at our beck and call we decided to invest in such a machine and place it in an independent testing laboratory. The availability of this machine has greatly facilitated the development of results from our research and development program on flame-hardened rail."

● **Verification tests set.** While the rolling-load machine is a valuable adjunct to its own testing efforts, Linde recognizes the need for having the results verified by the AAR. It has accordingly arranged for verification tests to be conducted on rail samples with a ¼-inch hardened case.

Samples of flame-hardened rails also were subjected to drop tests at the AAR laboratory. In this test a 2,000-lb tup is dropped on the rail from a height of 20 feet. After two blows a flame-hardened specimen deflected 1½ inches with no fracture. "Since non-treated rail deflects approximately 2 inches," said Bennewitz, "this means that our flame-hardened rail has only slightly less ductility than virgin rail. Hence, its performance is not impaired by bending or sudden impact."

● **Back in business.** So, convinced that it can produce hard-case rail of the highest possible quality, Linde is resuming production at its flame-hardening plants. The Pueblo plant has been back in operation for some time. The Ensley facility goes into production in November and the plant at East Chicago in December.

What about the problem of shelley rail? This subject, too, was given careful study by the researchers. "Like so many railroad engineers," said Bennewitz, "our experts were not successful in establishing why rail shells, but our men believe that foreign matter in the metal is probably the most relevant cause for shelley failures." He adds parenthetically that the researchers were unable to relate premature shelley failures to any faulty procedures in hardening the rail.

While the company is not prepared to state that its flame-hardened rail will never shell, it believes that its process will prolong the useful life of the rail.

Why has Linde pushed so hard to perfect its flame-hardening process? Answering this question, Linde spokesmen point out that many chief engineers and track supervisory personnel have indicated that the development of "hard" rail is one of the most significant advances made in recent years by suppliers to the American railroads. They point to statements of these engineers to the effect that "hard" rail should alleviate some track problems created by use of high-capacity cars; also, that such rail will doubtless effect substantial savings in track maintenance, especially on heavy-duty curves and grades and in switching yards. ■

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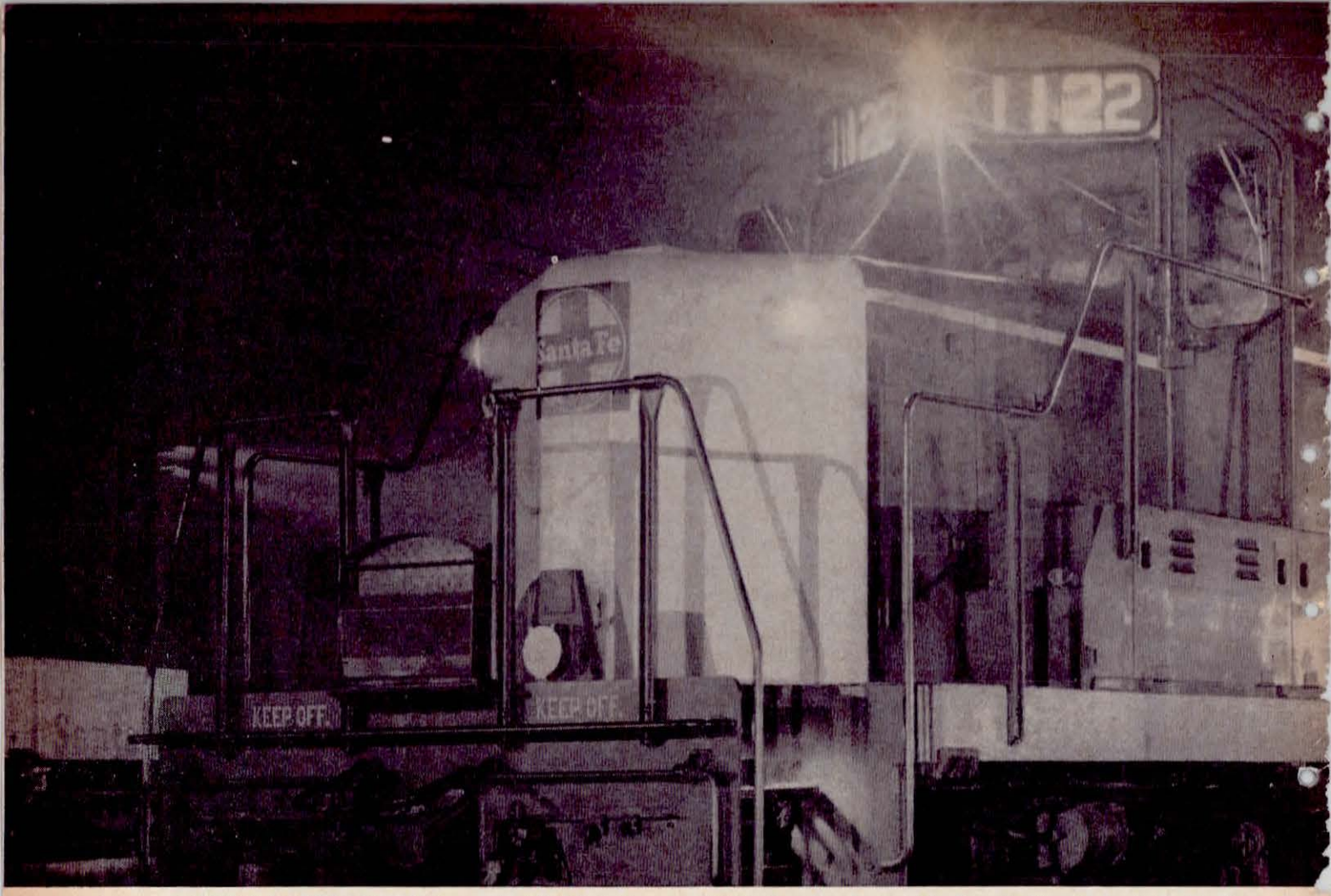

ATCHISON, TOPEKA & SANTA FE operates 84,000 freight cars on 13,000 miles of track, stretching from the Great Lakes to the Pacific and from

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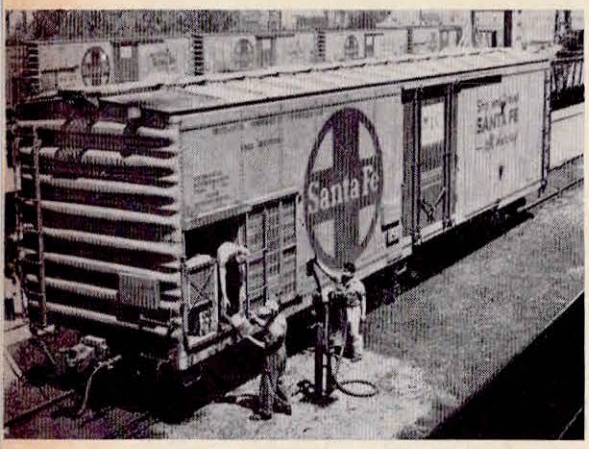
Santa Fe accepts the challenge of rising operating expenses and competition from other modes of transportation with the vigor that has made it one of the nation's leading roads. A pioneer in the development of specialized cars, Santa Fe annually carries out a multimillion dollar program of building new rolling stock to offer shippers and passengers a complete, customized transportation service.

To improve handling of shippers' products, Santa Fe added its own design Shock Control cars, which have set records for safe movement of fragile freight; MTC cars, which control interior temperatures from zero to 70°F; and tri-level Autoveyor cars developed by the Santa Fe for use in automobile shipment. For passengers, the road added 55 cars including an improved version of its Hi-Level car.

As a prominent aid in operating and maintaining that stock, Mobil offers Santa Fe—and other roads—Mobil diesel fuel, Mobil lubricants and most important, Mobil experience. Mobil men average over 25 years' experience, understanding not only petroleum products, but railroading, too. They're armed with proven products, complete technical information,



MECHANICAL TEMPERATURE CONTROL cars like these are capable of keeping 59 tons of perishable freight at any temperature between zero and 70°F. The mechanical refrigeration units are driven by Mobil-lubricated diesel engines.

SHOCK CONTROL CARS developed by the Santa Fe are setting records for miles of damage-free freight movement. Hydraulic heart of the mechanism is filled with Mobiloil Special, because of its wide temperature performance.

PIGGY-BACK is a rapidly growing service on all parts of the Santa Fe system, and is operated in co-operation with some 200 motor carriers. Here, oiler checks level of Delvac® Special in diesel engine

the Colorado Rockies to the Gulf. These giant diesels are ready to pull a fast freight from Corwith Yard, Chicago, for a 60-hour run to California.

move toward a better way"

a network of strategically located supply points, and a policy of providing special personal service in working on specific customer problems.

Among other indications of Santa Fe's progressive attitude shown in 1963: the rapidly expanded piggy-back operation and the development of a microwave communications network to extend from Kansas City to the Coast.

The Santa Fe's determination to provide precision transportation should add even more luster to its reputation as one of the most advanced—and most successful—railroads.

Mobil

RAILROAD PRODUCTS

99 years of helpful association with America's Railroad Industry

Mobil Oil Company, 150 E. 42nd St., New York 17, N.Y. · 59 East Van Buren St., Chicago 5, Ill.

on refrigeration unit for one of Santa Fe's own piggy-back trailers. Besides lubricating oils, Mobil supplies Santa Fe requirements for diesel fuel and specialty products such as Mobil curve grease.

TRI-LEVEL AUTO-VEYORS, first built in Santa Fe shops in 1960, changed the method of transporting new automobiles. Tri-level car carries 12 standard or 15 compact vehicles. Each is equipped with Shock Control mechanism, filled with Mobiloil Special.

SUPER CHIEF features a unique Pleasure Dome Lounge Car with its famous Turquoise Room for private dinner parties. Air-conditioning and electrical plants for these lounge cars are powered by Delvac S230-lubricated diesel engines.

Circle 16 on reader service card

7707

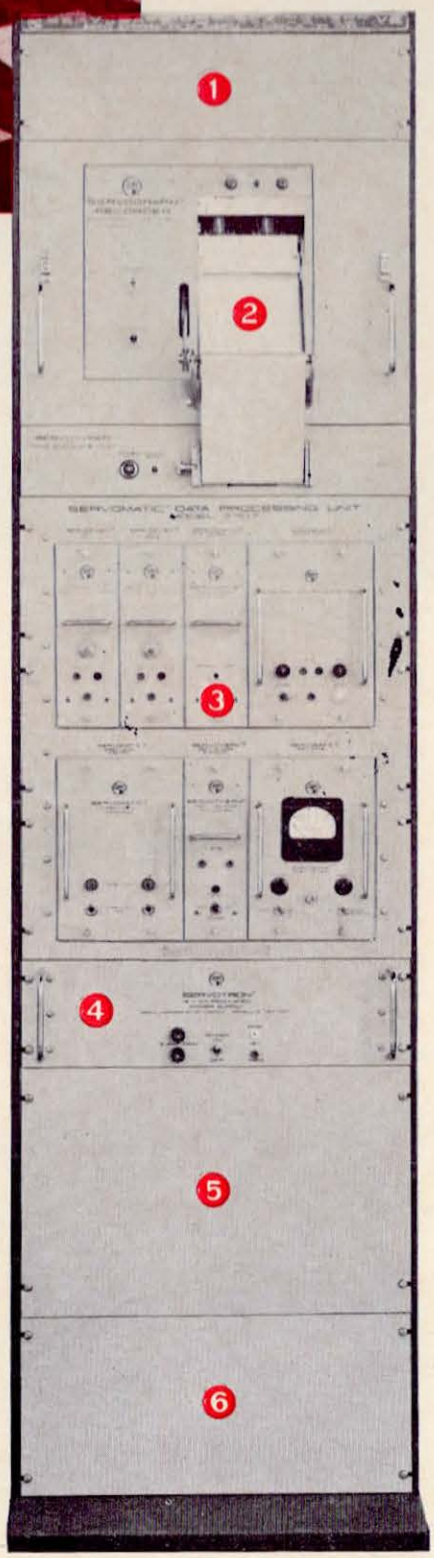
a new generation is born...

What's the latest in hot box detection? You're looking at it—the streamlined Model 7707. Yesterday's deluxe system has become today's standard.

The new generation of SERVOSAFE® Hot Box Detective* systems incorporates more than extended performance . . . better dependability . . . extra flexibility for expansion. It incorporates ten priceless years of Servo and railroad experience in pioneering and perfecting the science of hot box detection via infrared.

Designed specifically to respond accurately to today's higher train speeds, the Model 7707 is bi-directional and features compact, modular construction. The system provides shorter gating . . . faster response . . . improved performance with passenger trains . . . and the capability to extend the system to include automatic readout at minimum cost.

Send for details. Or, ask your Servo man.



1. CARRIER
2. RECORDER mounts here when panel is located at trackside at scanner site.
3. DATA PROCESSING UNIT two tiers of redesigned plug-in modules that are easy to maintain and replace. Stabilized Main Power Supply. Test Panel optional. Unit packs extra performance in same compact space.
4. SERVOTRON 12-VOLT POWER SUPPLY eliminates need for batteries.
5. & 6. Space provided for incorporating Alarm Monitor, Alarm Computer, or High-Deflection Indicator — to trigger alarms for overheated journal bearings in excess of preset values.

All equipment, including recorder, can be mounted in space-saving 6-ft. rack . . . installed in standard signal case.

Redesigned recorder is more compact . . . gives broad view of train recording. Chart paper easier to change. Recorder can be equipped with alarm light adjustable from 10-20 mm deflection (with High-Deflection Indicator system) to call attention to hot box.

SERVO®

RAILROAD PRODUCTS DIVISION

SERVO CORPORATION OF AMERICA

111 New South Road • Hicksville, L. I., N. Y.

*Protected under one or more of the following U.S. Patent Nos.: 2,880,309; 2,963,575; 3,028,484; 3,095,171; 3,108,772; 3,108,773. Canadian Patent Nos.: 643,038; 643,091; 690,506; 690,907. Other U.S. and foreign patents pending.

Circle 13 on reader service card

MARKET OUTLOOK

Carloadings

Loadings of revenue freight in the week ended Nov. 6 totaled 619,480 cars, the Association of American Railroads announced on Nov. 11. This was a decrease of 15,382 cars, or 2.4%, compared with the previous week; a decrease of 367 cars, or .06%, compared with the corresponding week last year; and an increase of 24,711 cars, or 4.2%, compared with the equivalent 1963 week. Ton-miles generated by carloadings in the week ended Nov. 6 are estimated at 14.5 billion, an increase of 4.7% above the corresponding week of 1964, and 12.6% above the 1963 week.

REVENUE FREIGHT CARLOADINGS
For the week ended Saturday, Nov. 6

District	1965	1964	1963
Eastern, including Allegheny and Pocahontas ..	243,107	242,715	232,496
Southern	121,615	122,793	114,379
Total Eastern and Southern Districts	364,722	365,508	346,875
Northwestern .	81,810	85,134	80,037
Central Western	130,072	126,424	126,538
Southwestern .	42,876	42,781	41,319
Total Western Districts	254,758	254,339	247,894
Total All Roads	619,480	619,847	594,769
Commodities:			
Grain and Grain products	62,970	63,103	65,052
Livestock	5,102	4,234	5,646
Coal	121,996	117,371	118,855
Coke	7,041	9,254	6,790
Forest Products	41,903	39,363	36,985
Ore	34,985	43,500	34,335
Merchandise l.c.l.	7,973	10,920	15,503
Miscellaneous .	337,510	332,102	313,603
Nov. 6	619,480	619,847	594,769
Oct. 30	634,862	647,502	622,679
Oct. 23	622,628	637,059	625,173
Oct. 16	633,057	630,345	625,923
Oct. 9	614,214	623,840	635,927
Cumulative total, 45 weeks ...	25,637,517	25,223,749	25,259,148
Estimated revenue ton-miles (billions) 45 weeks	603.0	572.3	541.8

PIGGYBACK CARLOADINGS.—U.S. piggyback loadings for the week ended Oct. 30 totaled 22,988 cars, compared with 18,598 for the corresponding 1964 week. Loadings for 1965 up to Oct. 30 totaled 869,026 cars, compared with 753,639 for the corresponding period of 1964.

IN CANADA—Carloadings for the seven-day period ended Oct. 21 totaled 92,905 cars, compared with 80,660 for the previous seven-day period, according to the Dominion Bureau of Statistics.

	Revenue Cars Loaded	Total Cars Rec'd from Connections
Totals for Canada		
Oct. 21, 1965	92,905	25,881
Oct. 21, 1964	83,945	21,361
Cumulative Totals		
Oct. 21, 1965	3,179,521	1,005,234
Oct. 21, 1964	3,180,620	980,138

FREIGHT-TRAIN CARS

► *Canadian National.*—Is converting 81 box cars into wood-chip cars at its Moncton, N.B. shops. Cars are removed and sides are raised to increase capacity from 2,900 to 3,900 cubic feet.

► *Green Bay & Western.*—Ordered eight 86½-ft high-cube box cars from Thrall for delivery in July 1966.

► *Great Northern.*—Ordered 10 extra-wide-vision cupola cabooses from International Car for delivery in second-quarter 1966.

► *Santa Fe.*—Will spend approximately $84 million in 1966 for 4,346 new freight cars. ATSF will acquire 500 40-ft box cars equipped with plug and access doors for grain service; 1,444 specially equipped box cars, including 900 insulated cars; 700 70-ton Mechanical Temperature Control cars; 851 gondola and hopper cars of various types; 602 flat cars, including multi-level rack cars, TOFC units, wallboard cars and others equipped with special tie-down devices; and 249 auto-parts cars, including 75 86½-ft high-cube parts cars. All specially equipped box cars, MTC cars, flat cars and auto-parts cars will be equipped with Shock Control underframe. Santa Fe President Ernest S. Marsh noted that "including the 1966 program, we will have purchased more than 18,000 new freight cars since the beginning of 1963, at a cost of more than $300 million. This means that more than 20% of our fleet will be less than four years old."

► *Bad Order Ratio 0.2% Lower Than Last Year.*—Class I roads on October 1 owned 1,488,145 freight cars, 9,305 less than on October 1, 1964, according to AAR report summarized below. Bad Order Ratio was 0.2% lower than on October 1, 1964.

	Oct. 1, 1965	Oct. 1, 1964	Change
Car ownership	1,488,145	1,497,450	—9,305
Waiting repairs	86,163	89,879	—3,716
Repair ratio	5.8%	6.0%	—0.2%

LOCOMOTIVES

► *Canadian National.*—Ordered 30 diesel-electric freight locomotive units at a cost of $8.5 million. Ten 3,000-hp units will be built by General Motors Diesel, Ltd., and 20 2,400-hp units by Montreal Locomotive Works. Deliveries are scheduled to begin in January 1966 and to be completed in the following June. The 3,000-hp units will be the most powerful in the CN fleet.

NEW FACILITIES

► *Kentucky & Indiana Terminal.*—Ordered Type J remote control equipment from General Railway Signal for control of FG interlocking from M Tower, Louisville, Ky.

► *Pennsylvania.*—Is planning to construct a two-mile, $450,000 spur from its Lebanon branch at Cornwall, Pa., to serve an Aluminum Company of America plant to be built on a 600-acre tract near Lebanon. The railroad has already awarded a contract for grading, which will require 18,000 cubic yards of rock excavation, 43,000 yards of grading and 6,200 yards of fill through rugged terrain. Work is expected to be completed by mid-December, then rails will be laid to transport fabricated steel and other materials to build the plant. The PRR will serve the new industry through its Harrisburg yards.

YOU OUGHT TO KNOW

The tax-equality fight, cont.: The railroad industry's battle for equality of taxation was carried before the men who should know taxes best last week—members of the National Tax Association. Association of Western Railways President Clair M. Roddewig noted the extent of the problem (a $150-million annual extra payout chargeable to the practices of tax assessors when dealing with railroad property) and he reviewed both the modest successes railroads have made in the courts and the recent interest in eliminating discriminatory taxation as expressed by the federal government. Concluded AWR's president: "It seems likely that in some states, the railroads will be unable to get relief from these discriminatory taxes by any other means than the enactment of the proposal now before Congress. Such a law [providing injunctive relief against discriminatory assessments] would remove the final determination of these tax issues beyond the influence of local political considerations."

Reading turns a profit: The Reading did $6,555,008 better in the first nine months of 1965 than it did in the corresponding period last year, President Charles E. Bertrand has disclosed. The road had a net of $1,407,229 for this year's three quarters, as opposed to a loss of $5,147,779 for the first three quarters of 1964. Bertrand attributed the improvement in income to the road's "vigilant search for new business while maintaining a rigid control of costs."

Postponement on CSS&SB: In response to a petition from Monon, the ICC has postponed from Nov. 30 to Jan. 10 hearings in the control case involving Chicago South Shore & South Bend. Monon and Chesapeake & Ohio both want control of the electrified line. In its request for delay, Monon indicated that negotiations under way might lead to a reduction in complications and a consequent lessening of the burden on the Commission and the parties.

'Dixie Flyer' gets a twin: Chicago & Eastern Illinois, Louisville & Nashville and Atlantic Coast Line are adding (on Nov. 16) a second high-speed "Dixie Piggyback Flyer" on the run from Chicago to the Southeast. The new train will depart Chicago at 2 p.m., arrive in Atlanta 24 hours later and in Jacksonville in time for second-morning deliveries. Similar speeded-up service will also be provided by a new northbound train.

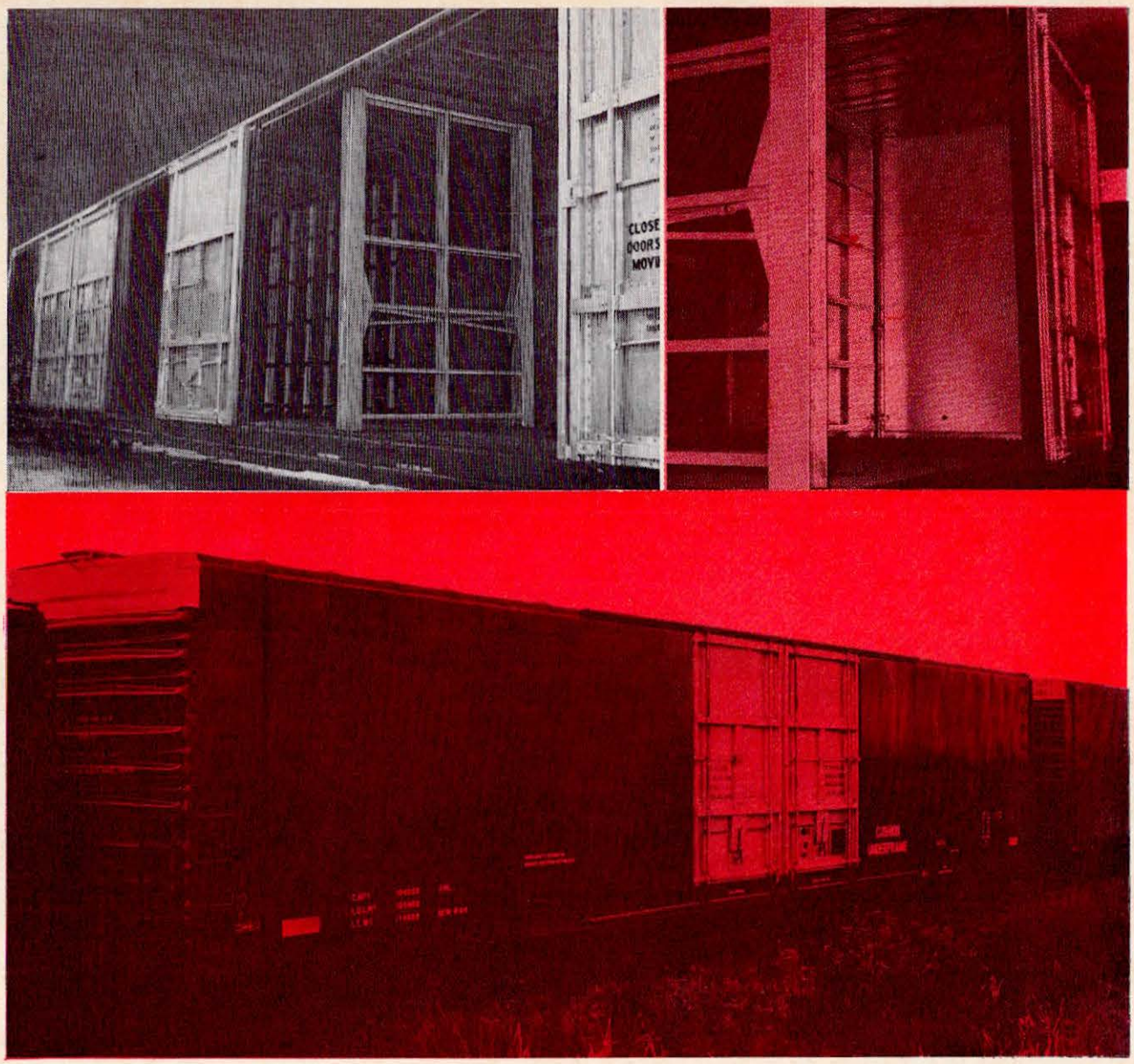
Union Carbide's GTM honored: This year's Seley Awards—for distinguished service to transportation—will go to Charles H. Beard, general traffic manager and assistant to the vice president of Union Carbide Corp. Presented annually by the Transportation Association of America, the Awards consist of a personalized gold medal plus two $1,000 grants to further a transportation policy scholarship at a college or university designated by the recipient. Beard joined Union Carbide in 1936 as assistant general traffic manager. He was a consultant to former Under Secretary of Commerce for Transportation, Clarence D. Martin, Jr., and he served with the Cabinet Committee on Transport Policy and Organization under former Secretary of Commerce Sinclair Weeks.

Drama at the depot: It's been several years since the old Illinois Central passenger station down by the Ohio River in Louisville has seen a passenger train—but the station itself is once again humming with activity. In what must be a unique job of remodeling, the Actors Theater of Louisville has turned the place into a playhouse. Opening night last month was carried off well—and the first-nighters were carried in via a special train from Louisville's still-in-use passenger terminal downtown. One drama critic's reaction: "Acoustics, somewhat surprisingly, are excellent."

Truck tonnage: Intercity truck tonnage in the week ended Oct. 30 was 3.4% above that of the preceding week, and 6.9% ahead of the volume in the corresponding week of 1964, according to American Trucking Associations.

Current statistics

Net Income	
6 mos., 1965	$335,000,000
6 mos., 1964	330,000,000
Carloadings, revenue freight	
45 wks., 1965	25,637,517
45 wks., 1964	25,223,749
Freight cars on order	
Oct. 1, 1965	42,222
Oct. 1, 1964	31,201
Freight cars delivered	
9 mos., 1965	54,855
9 mos., 1964	51,440
Serviceable cars	
Oct. 1, 1965	1,401,982
Oct. 1, 1964	1,407,571



There are 86½ feet between the Standard Dreadnaught Ends on the world's largest production line boxcar

It's 12' 9⅝" from the floor to the Standard Diagonal Panel Roof. Other Standard-built components are the coupler release rigging and the steel corner caps.

Today hundreds of these mammoth cars are being built by various car builders. The cars are used to transport automotive parts—in adjustable compartments which allow pre-sorting of parts for more efficient handling at auto assembly plants. The proven durability of Standard components made them the logical choice for these 140,000-lb. capacity cars.

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Circle 17 on reader service card

Freight and Passenger Car Charts

These charts are very helpful to AAR billing clerks, mechanical engineers, purchasing and stores personnel, car inspectors, write-up men, car foremen, and anyone else who needs a knowledge of car parts and their relation to each other.

The charts include a cutaway diagram of the car and a listing of important parts with arrows showing where the part is located. These charts are a part of standard training programs used on a number of major railroads.

$2 each
$10 for any six

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if you return the charts to us within 30 days

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- ☐ **Tank Car (22x35 inches)**
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_____ **RR**_____

PEOPLE

CHESAPEAKE & OHIO.—**J. G. Smith,** assistant division engineer, Huntington Division, Huntington, W. Va., promoted to division engineer there, succeeding the late **C. M. Kern. C. F King** replaces Mr. Smith.

DELAWARE & HUDSON.—**E. J. Fauth,** assistant general freight agent, Albany, N.Y., promoted to general freight agent there, succeeding the late **W. F. Bradt. C. H. House, Jr.,** succeeds Mr. Fauth as assistant general freight agent.

FRISCO.—**Walter H. Cramer, Jr.** named director of traffic development, St. Louis. He was formerly manager, grain and grain products, commercial development department, **Baltimore & Ohio,** Baltimore.

GREAT NORTHERN.—**Emmett M. Brady,** general passenger agent, St. Paul, appointed passenger traffic manager, to succeed **Kent C. Van Wyck,** retired. **Frank L. Strecker,** general passenger agent, St. Paul, named assistant passenger traffic manager. **Raymond J. Class,** general passenger agent, Seattle, appointed assistant passenger traffic manager, St. Paul. **Stanley T. Thorson,** general agent, passenger department, Seattle, becomes assistant general passenger agent there. **Mark C. Sandstrom,** district passenger agent, named general agent, with headquarters remaining at Seattle.

James F. Hughes appointed assistant advertising manager, St. Paul.

PENNSYLVANIA.—**Albert M. Schofield,** assistant general manager—transportation, Philadelphia, appointed assistant to vice president—operations. He will direct preparations for coordinating operations with the **New York Central** pending approval of merger of the two roads by the Interstate Commerce Commission.

Russell W. Talbot, general manager—freight rates, Philadelphia, appointed to the new position of assistant vice president—marketing (RA, Nov. 8, p.7). **Charles C. Kelsey,** sales manager, Southwestern district, Indianapolis, named to the new position of manager—market research. **John D. Finley,** assistant general manager—freight rates, advanced to general manager—freight rates.

READING.—**Albert W. Nemenz,** manager of coal traffic, appointed director—coal traffic, Philadelphia, succeeding **John W. Stewart,** who retired Nov. 1 after 38 years of service. **Linwood A. Kulp** appointed assistant auditor of revenues, succeeding **Frederick A. Riley, Jr.,** who retired Nov. 1 because of ill health, after almost 42 years of service.

Supply Trade

John F. Hanlon, assistant manager, Washington Office, **Westinghouse Electric Corp.,** has been appointed corporate transportation representative there. Mr. Hanlon will be responsible for serving the system and equipment requirements of transportation programs of the various government agencies and departments. He will also be responsible for similar activities in the Baltimore area.

Paul F. Zimmer has been appointed manager and **Robert E. Burnet,** assistant manager of the newly created Fleet Services Department, **Tank Car Division, General American Transportation Corp.** The department will be responsible for allocation of special tank cars to meet specific needs of GATX customers.

Emmett M. Brady
GN

Albert M. Schofield
PRR

Russell W. Talbot
PRR

John F. Hanlon
Westinghouse Electric

Paul F. Zimmer
GATX

Arthur J. Doyle
Camel Sales

Arthur J. Doyle has been elected president of **Camel Sales Co.,** a wholly-owned subsidiary of **Youngstown Steel Door Co.** Mr. Doyle, who will continue as a vice president of the parent company, succeeds **Earl C. Browne,** who will retire at the end of the year after 37 years of service. Mr. Doyle will make his headquarters at Chicago.

Richard F. Nogal has been elected assistant vice president, **Camel Sales Co.**

Robert A. Sherman has been named eastern sales representative, **Coach & Car Equipment Corp.** He was formerly vice president of sales, Eastern Territory, **Budd Co.**

Robert L. Dame has joined **Container Transport International Inc.,** New York, as planning consultant. Mr. Dame was formerly with Xtra, Inc., and North American Van Lines (Europe). He is a director, Bulk Packaging & Containerization Institute.

OBITUARY

Marvin Nixon, western manager of industrial development, **Northern Pacific,** died Oct. 27.

Joseph J. O'Connor, regional traffic manager, **Louisville & Nashville,** Louisville, Ky., died Oct. 29 at Columbus, Ohio.

Advertisers' Index

ACF Industries, Inc. American Can & Foundry Division ..31-33

American Brake Shoe Company 34-35

American Steel Foundries, Inc. 3

Bethlehem Steel Corp. 14-15

Caterpillar Tractor Co. ..... IFC

General Railway Signal Co. 9

Humble Oil & Refining Co. 6

Henry Miller Spring & Manufacturing Co. 16

Mobil Oil Company 38-39

Motorola Communications & Electronics 37

National Cylinder Gas-Division of Chemetron Corp. 25

National Lead Company, Magnus Metal Division 10

Poor & Company ..... BC

Pullman-Standard, Division of Pullman Inc. 26-27

Railway Educational Bureau 44

Servo Electronic Switch & Signal Company 40

Frank Speno Railroad Ballast Cleaning Co., Inc. 4

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TRinity 2-6720—J. S. Crane

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LAkeside 1-2322
Joseph Sanders

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HUbbard 3-8414
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C. H. Yiu, Managing Director

THE ACTION PAGE

RPI plans for the next ten years

For more than a decade the Railway Progress Institute has worked to unify the railroad industry's suppliers and to put the influence and strength of that group behind railroad objectives and goals. The RPI's annual dinner in Chicago next Thursday, in fact, comes in the middle of the organization's tenth anniversary year.

As hundreds of railroad and supply industry leaders gather at Chicago for the RPI dinner, one thing is plain: The suppliers (representing an industry with 500,000 employees and 900 plants in 45 states), are in a position to extend powerful help to the carriers on many fronts. After ten years of collective effort through the RPI, the suppliers are, more than ever before, aware of the social, regulatory and competitive roadblocks ahead on the railroad comeback trail. Suppliers are working shoulder-to-shoulder with railroaders to remove obstacles to railroad progress. They are working together in the corridors of Congress. They are planning the particulars of technological progress together in research centers, drafting rooms and in coordinated study of technological problems. They are cooperating in political battles affecting industry interests at state and local levels. In many professional and technical organizations railroaders and suppliers are working together to get a better deal for railroads—and indirectly a better deal for companies that comprise the railway supply business.

More cooperation, of course, will be needed to deal with the many problems still confronting the industry. Organizational anniversaries such as the one the RPI observes this year tend to be occasions for some prideful horn-blowing (to let folks know what's been done) and for some equally prideful announcements of plans for the future (to let folks know that the celebrating organization is still with it). It is this paper's view that the carriers should applaud the RPI's past decade of service and welcome the suppliers into an even closer partnership.

A challenge to the suppliers

Individual supply company technicians, engineers, researchers and officers have got their hands full dealing with the quickening tempo of change that is transforming every conceivable aspect of up-to-date railroad operation. As railroads get more business and thereby more ability to move after technological betterments, the supply industry is challenged to accelerate research and development efforts. The effort is important for continued success in the industry's competitive battle. New railroad systems and improved techniques in the 10-year life span of the RPI—things like unit trains, bigger cars and more powerful locomotives, TOFC and computer programs—are impressive proof of the importance to the railroad industry of aggressive, resourceful suppliers.

What about the next decade? RPI's members—and the RPI itself—give no indication they'll risk the old vaudeville question, "What have you done for me lately?" from the railroads in time ahead.

Growth and acceleration ahead

RPI's Chairman A. H. Smith, president of Kerite, and RPI President Nils Lennartson, are working to expand the relationships of RPI people with key railroad personnel for maximum results in the development of whatever technology the carriers will require. Similarly, RPI plans to accelerate its cooperation and help to the industry in the areas where progress is very important, if less measurable. RPI members and the RPI itself are expanding the liaison they have maintained for more than a decade with individual railroads, congressional committee professional staffs, departments of government such as Commerce, the Association of American Railroads, the Interstate Commerce Commission, regional railroad organizations and other industry groups. RPI's liaison with this network has enabled it to be both accurately informed of industry objectives and to put the collective influence of the organization's members on the side of the carriers as the industry has fought its many battles in Congress, struggled for public recognition of its claims for equality of treatment at the hands of government and competed for traffic. No one can begin to assess the value of this RPI support to the railroad industry, but most would agree it represents a substantial improvement over anything railroads had working for them before.

Railroads' commercial prospects are getting brighter. The government shows signs of recognizing the need for legislation to equalize competition in the transportation field. There is no better time than now for the industry's suppliers to rededicate themselves to the statement of purpose that RPI's charter members adopted ten years ago, namely, to aid in every way possible the progress and prosperity of railroads as the best way to aid the growth and success of the supply industry. Suppliers have extended magnificent technological help to railroads in the last decade. They have produced what railroads have had to have to make headway on the comeback trail. Basic research and development performed by suppliers is a bright plus on the railroad horizon. The suppliers have lent their aid in support of vital industry legislation and objectives. Indications are plentiful that progress will continue in RPI's second decade.

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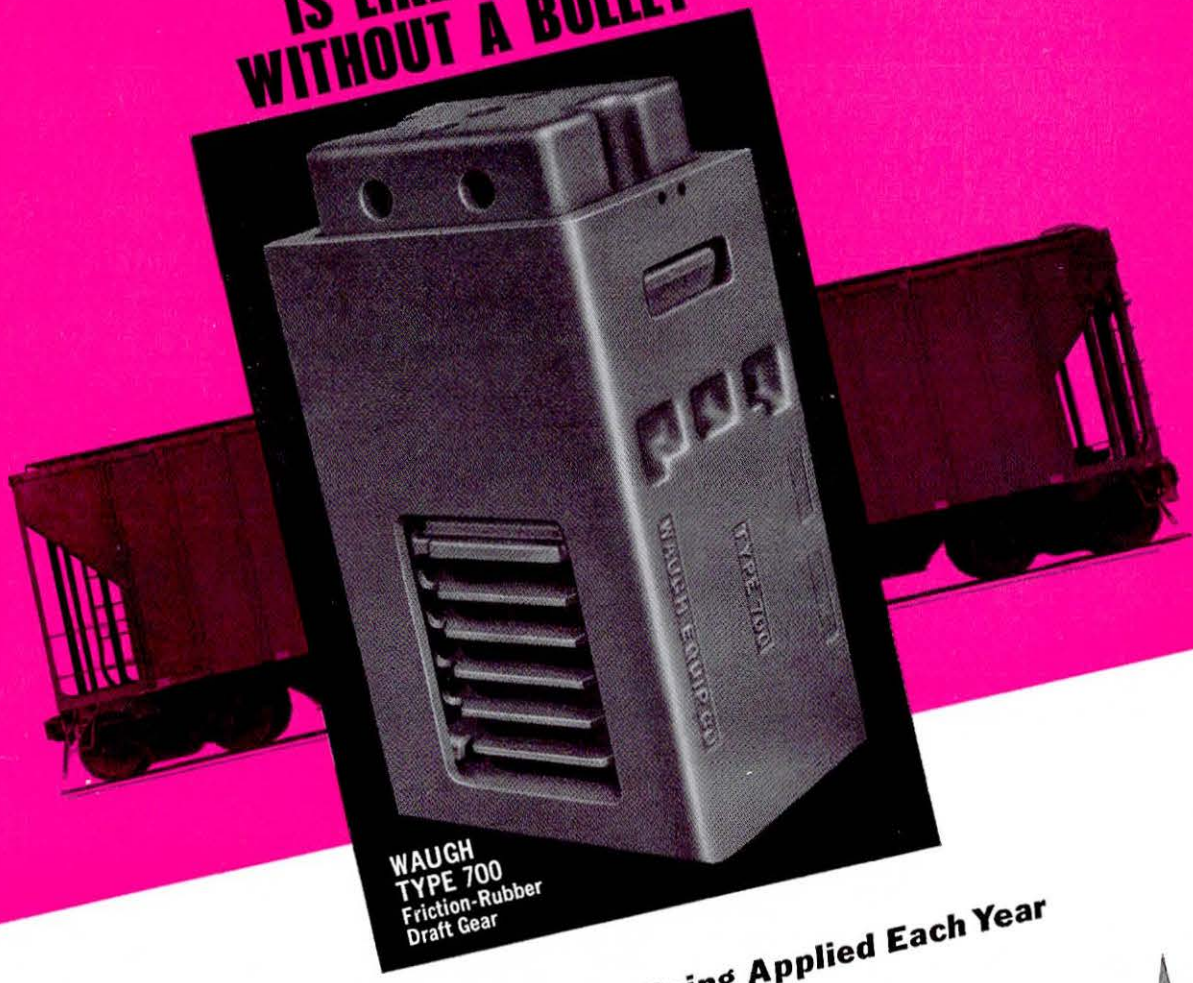

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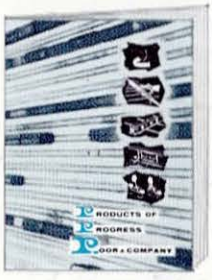

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